HESI ENTRANCE EXAMINATION
STUDY GUIDE
# TABLE OF CONTENTS

**HESI Study Packet**

**Introduction**

**HESI Test Overview** (Math, Reading, Comprehension, Vocabulary, Grammar)

Math (face sheets precedes each section—pages bold, underlined; Answers follow each section)

<table>
<thead>
<tr>
<th>Math diagnostic Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEST Math Review I-III: Add, subtract, multiply, divide</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math IV-VI: Add, subtract, multiply, divide decimals</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math VII-XII: Fraction terms; reducing proper and improper fractions; LCD changing improper to mixed, mixed to improper; ass, subtract, multiply, divide fractions; change fractions to decimals; change decimals to fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math XIII: Ratio/Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>34-36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math XVI: Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>37-39</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math: Helpful information to memorize and understand: chart of fractions, decimals, percents; Roman numerals; measurement conversions</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math Review Answer key</th>
</tr>
</thead>
<tbody>
<tr>
<td>42-43</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATH PRACTICE TEST 1 (face sheets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>44-46</td>
</tr>
</tbody>
</table>

1. Add, subtract, multiply, divide

2. Multiply, divide (by & into), and, subtract decimals

3. Change fractions to decimals; decimals to fractions

4. Add, subtract, multiply, divide fractions

5. Percentage

6. Ratio/Proportion

7. Conversion
8. Rounding

MATH PRACTICE TEST 2 (face sheets)

9. Add, subtract, multiply, divide

10. Change decimals to fractions; change fractions to decimals; multiply, divide (by & into) add, subtract decimals.

11. Add, subtract, multiply, divide fractions

12. Percentage

13. Ratio/Proportion

14. Conversion

15. Rounding

Reading Comprehension (face sheets) face sheet precedes each section pages are **bold, underlined**: answers follow each section

How to answer reading comprehension questions and sharpen your reading skills (without really trying)

Sample reading test

Reading

Vocabulary (face sheets) face sheet precedes each section pages are **bold, underlined**: answers follow each section

1. Test 5 (everyday)

2. Exams 7, 10-14 (everyday)

3. Spelling (everyday)

4. Multiple Choice Quiz (medical terminology) Chapter One- Four, Twenty-One

List of medical terminology (four study only)

Grammar (face sheets) face sheet precedes each section- pages are **bold, underlined**: answers follow each section

1. Exercise One: Problems with Verbs (Part 1)
Math Overview

Types of questions (no word or story problems)

1. Add, subtract
2. Add, subtract: decimals, whole numbers to decimals
3. Ratio; change fractions to ratio
4. Change decimal to percent
5. Multiply decimals
6. Divide by decimals
7. Rounding
8. Change fractions to decimals
9. Divide by fractions
10. Reduce
11. Add fractions with unlike denominators
12. Divide fractions by whole numbers
13. Divide fractions by fractions

HESI Reading Comprehension Overview

1. Need a good vocabulary to answer questions
2. Read, summarize
3. Implies information: Ex. (From the text) In a test, spend more time on essay questions, which are worth more. (From the question) In a test, in order to get more points, spend more time on difficult questions.
4. Long and short paragraphs
5. Other types of questions:
   A. Definition of words
   B. What is stated vs. implied
   C. Fact vs. opinion

HESI Vocabulary Test Overview

1. Vocabulary in context, or as definition, or correct usage---questions not always clear
   A. Multiple Choice, Scenario is set up
   B. Medical terms, some from biology
   C. Literary words
   D. Everyday words
HESI Grammar Overview

1. Particularly difficult for ESL (foreign) students
2. Questions 1-25 select best answer
   A. Verb Forms
   B. Dangling modifiers

3. Questions 26-50 Identify and correct incorrect portion
   a. Subject-Verb agreement
   b. Parallelism
   c. Plurals
   d. Infinitives (to + Verb) or Gerunds (verb + ing)
   e. Particles/prepositions (depend on, not depend in)
   f. There, their, they’re usage

4. Questions 51-55
Directions:
1) Take the diagnostic test that follows.
2) Score with the answer key that immediately follows.
3) Provide the following information hereon (pages 3,4) for tutor- and-self-evaluation:

Total number of problems: 27
Number correct: Multiply number correct X 100 =
Divide by total number of problems = %

Tutor will review for areas to work on in Math.
Areas to work on: , , , ,

NEXT STEP: GO ON TO MATH REVIEW, THEN PRACTICE TESTS 1 AND 2.
<table>
<thead>
<tr>
<th>Question Numbers</th>
<th>Type of Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Addition</td>
</tr>
<tr>
<td>2 5</td>
<td>Multiplication</td>
</tr>
<tr>
<td>3 6</td>
<td>Division</td>
</tr>
<tr>
<td>4</td>
<td>Subtraction</td>
</tr>
<tr>
<td>7</td>
<td>Add, subtract, multiply, decimals</td>
</tr>
<tr>
<td>8 9 10 11 12 16a 17 18 19</td>
<td>Concept of decimals, fractions, percent</td>
</tr>
<tr>
<td>13</td>
<td>Add fractions w/ unlike denominators</td>
</tr>
<tr>
<td>14</td>
<td>Multiply fractions</td>
</tr>
<tr>
<td>15</td>
<td>Divide fractions</td>
</tr>
<tr>
<td>16b</td>
<td>Concept of ratio</td>
</tr>
<tr>
<td>21</td>
<td>Subtract decimals</td>
</tr>
<tr>
<td>22</td>
<td>Multiply decimals</td>
</tr>
<tr>
<td>23</td>
<td>Divide by decimals</td>
</tr>
<tr>
<td>24 25 26</td>
<td>Percent problem</td>
</tr>
<tr>
<td>27a 27b</td>
<td>Ratio Problem</td>
</tr>
</tbody>
</table>
Number Power Review Pretest

This pretest will tell you which chapters of Number Power Review you need to work on and which you have already mastered. Do all the problems that you can. There is no time limit. Check your answers with the answer key. Fill out chart at test end. Do all work on these pages.

Find an answer to each problem

1.  793
2. 215 x 89 =
3. 417 ÷ 19
   
   517
   + 385

Find an answer to each problem.

4.  2800
5. 173
6. 4,208 ÷ 16
   
   - 946
   x 26

7. Find the Value of the expression: 3 ($2.50 - $1.00) + ($10.00 ÷ 4).

8. Write the following numbers in order, from least to greatest.
   3  .034  30%  2  4%  0.4
   4  3

9. What percent of this pizza has been eaten?
Write <, > or + to compare each pair of numbers.

10. $3 \quad 21$
11. $4 \frac{2}{3} \quad 14$
12. $2 \frac{4}{3} \quad 2 \frac{11}{5} \quad 15$

8    48

Solve each Problem.

13. $2 \frac{3}{4} + 1 \frac{3}{4}$
14. $2 \times 3 \quad 3 \quad 5$
15. $1 \div 5 \quad 4 \quad 8$

16. Keisha bought sixteen cans of soda for a birthday party. Six of these are cans of cola.
   a. What fraction of the soda is cola (red)?

   

   b. What is the ratio of cola to flavors that are not cola?

Write <, >, or = to compare the pair of decimals.

17. $0.65 \quad 0.605$
18. $0.329 \quad 0.48$
19. $1.14 \quad 1.042$

20. Which expression can be used to find the width of each board?

Board

 gap 0.375

18"

a. $\frac{18 + (3 \times 0.375)}{4}$

b. $\frac{18 + (3 \times 0.375)}{3}$

c. $\frac{18 - (3 \times 0.375)}{3}$

d. $\frac{18 - (3 \times 0.375)}{4}$

e. $\frac{18 - (4 \times 0.375)}{4}$
Solve each problem.

21. \( 5.08 \)

22. \( 2.05 \times 0.06 = \)

23. \( 2.842 \div 1.4 = \) \(-2.92\)

24. The Clothes Tree is offering a 25% discount on all women’s sweaters. Including a 6% sales tax, what will Selena pay for a sweater that normally sells for $48.00?

For problem 25 & 26, refer to the circle graph.

25. What percent of the students at Highland Middle School are in the 8\(^{th}\) grade?

26. Suppose that next year the enrollment at Highland Middle School increases by 20%. How many students will be enrolled at Highland next year?

27. What is the ratio of the amount that Jonathan saved in May to the amount he saved in January? (Reduce to lowest terms. If necessary)

If Jonathan’s take-home pay is 1,500 per month, how much did he save during the 6 months shown on the graph?
Answer Key

1. 1,695
2. 19,135
3. 21 R 18
4. 1,854
5. 4,498
6. 263
7. $7.00 ($4.50 + $2.50)
8. 4%, 30%, 0.34, 0.4, 2/3, ¾
9. 62.5%
10. <
11. =
12. >
13. 4 – ½
14. 2/5
15. 2/5
16. a. 3/8 (6/16) b. 3/5 or 3 to 5 (6/10)
17. >
18. <
19. >
20. d.
21. 2.16
22. 0.123
23. 2.03
24. $38.16 ($36.00+ $2.16)
25. 34% (170/500 x 100%)
26. 600 (500 + 100)
27. 5/3 (25/15)
Directions:  1) Take the portion of the test that follows. Label and do all work on front and back of same page as problem.
   2) See pages 42-44 for answer key, to score portion.
   3) Provide the following information hereon (page 10) for tutor- and self-evaluation:

Total number of problems: ___24____ Add, subtract, multiply, divide, whole numbers
Number correct: _____ Multiply number correct X 100 = _______
Divide by total number of problems =_______ %

Tutor will review for areas to work on in math.

Areas to work on: __________, __________, __________, __________

OVERALL MATH REVIEW SCORE

Total number of problems (overall): ___104____
Number correct: _____ Multiply number correct X 100 = _______
Divide by total number of problems =_______ %

Tutor will review for areas to work on in math.

Areas to work on: __________, __________, __________, __________

NEXT STEP:   GO ON TO PRACTICE TESTS 1 AND 2.
# Basic Addition and Subtraction

## Basic Addition

**Steps:**
1. Line up digits according to place value.
2. Add the digits starting from right to left:
   - Ones: 2 + 3 = 5
   - Tens: 6 + 3 = 9
   - Hundreds: 4 + 1 = 5

**Example:**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>462</td>
<td>+133</td>
<td></td>
<td>595</td>
</tr>
<tr>
<td>462</td>
<td>-133</td>
<td></td>
<td>462</td>
</tr>
</tbody>
</table>

## Addition w/ Regrouping

**Steps:**
1. Line up the digits according to place value.
2. Add:
   - Ones: 5 + 9 = 14 (carry the 1 to the tens place, which is one place to the left)
   - Tens: 1 + 3 + 5 = 9
   - Hundreds: 8 + 5 = 13

**Example:**

<table>
<thead>
<tr>
<th>835</th>
<th>+559</th>
<th></th>
<th>1394</th>
</tr>
</thead>
<tbody>
<tr>
<td>835</td>
<td>-599</td>
<td></td>
<td>835</td>
</tr>
</tbody>
</table>

## Basic Subtraction

**Steps:**
1. Line up the digits according to place value.
2. Subtract:

**Example:**

<table>
<thead>
<tr>
<th>5,234</th>
<th>-4,112</th>
<th></th>
<th>1,122</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,234</td>
<td>+4,112</td>
<td></td>
<td>5,234</td>
</tr>
</tbody>
</table>

## Subtraction with Regrouping

**Steps:**
1. Line up the digits according to place value.
2. Subtract:
   - Ones: 7 – 9 (must borrow 1 from the 5 in the tens place)
   - Tens: 4 – 2 = 2
   - Hundreds: 5 – 4 = 1

**Example:**

<table>
<thead>
<tr>
<th>4 1 7</th>
<th>4 5 7</th>
<th>- 2 9</th>
<th>4 2 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>428</td>
<td>+29</td>
<td></td>
<td>457</td>
</tr>
</tbody>
</table>

## Vocabulary:

- **Digit:** A numeral, (the number 7 is a digit).
- **Place Value:** Each digit in a number occupies a position – that position is called its place value.

## Now you try!

1. 1,803 + 156 =
2. 835 + 145 =
3. 1,372 + 139 =
4. 123 + 54 + 23 =
5. 673 – 241 =
6. 547 – 88 =
7. 222 – 114 =
8. 12,478 – 467 =
Basic Multiplication  
(Whole Numbers)

23 X 5  
Steps:  
1. Multiply one digit at a time.  
2. Multiply (5 X 23)  
   Ones: 5 x 3 = 15 (carry the 1 to the tens place and write the 5 in the ones place)  
   Tens: 5 x 2 = 10 + 1 = 11  

<table>
<thead>
<tr>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
</tr>
<tr>
<td>x 5</td>
</tr>
<tr>
<td>115</td>
</tr>
</tbody>
</table>

623 X 45  
Steps:  
1. Multiply 623 X 5  
   5 x 3 = 15  
   5 x 2 = 10 + 1 (carried over)= 11  
   5 x 6 = 30 + 1 (carried over)= 31 (doesn’t need to be carried over)  
2. Multiply 623 x 4 (remember to line up the ones digits with the four by using zero as the placeholder):  
   4 x 3 = 12  
   4 x 2 = 8 + 1 = 9  
   4 x 6 = 24  
3. Add the two products together:  
   3,115 + 24,920 = 28,035 is the final product  

<table>
<thead>
<tr>
<th>623</th>
</tr>
</thead>
<tbody>
<tr>
<td>x 45</td>
</tr>
<tr>
<td>3115</td>
</tr>
<tr>
<td>24,920</td>
</tr>
<tr>
<td>28,035</td>
</tr>
</tbody>
</table>

Vocabulary:  
Product: The answer to a multiplication problem.  

HESI Hints:  
Remember, the placeholders help keep the problem aligned. If you do not skip a space, the answer will be incorrect. Below is an example of a well-aligned problem.  

Note: Timetables are crucial for doing multiplication, division, fractions, etc. Please notify the tutor if you do not know timesheets by heart at least through 9 x 9.
Steps:

1. Multiply 301 x 1
   - 1 x 1 = 1
   - 1 x 0 = 0
   - 1 x 3 = 3

2. Multiply 301 x 5
   - 5 x 1 = 5 (remember to use a zero for a placeholder)
   - 5 x 0 = 0
   - 5 x 3 = 15

3. Multiply 301 x 4
   - 4 x 1 = 4
   - 4 x 0 = 0
   - 4 x 3 = 12

4. Add the three products together:
   - 301 + 15,050 + 120,400 = 135,751 is the final product

Now You Try!

1. 846 x 7 =
2. 325 x 6 =
3. 653 x 12 =
4. 806 x 55 =
5. 795 x 14 =
6. 999 x 22 =
7. 582 x 325 =
8. 9,438 x 165 =
Basic Division
(Whole Numbers)

40 ÷ 8 =

\[ \begin{array}{c}
  8)\ 40 \\
  \underline{-40} \\
  \hline
  0
\end{array} \]

Steps:
1. Set up the problem. (Review the vocabulary section).
2. Use a series of multiplication and subtraction problems to solve a division problem.
3. \(8 \times ? = 40\)
   - Multiply: \(8 \times 5 = 40\)
   - Subtract: \(40-40=0\)
   - The quotient (or answer) is 5

672 ÷ 6 =

\[ \begin{array}{c}
  6)\ 672 \\
  \underline{-6}\ 07 \\
  \underline{-6} \\
  \hline
  0
\end{array} \]

Steps:
1. Set up the problem.
2. Begin with the hundreds place:
   - \(6 \times ? = 6\); we know \(6 \times 1 = 6\); Therefore, place the 1 (quotient) above the 6 hundred (dividend). Place the other 6 under the hundred and subtract: 6-6=0
   - Bring down the next number which is 7; \(6 \times ? = 7\). There is no number that can be multiplied by six that will equal seven exactly, so try to get as close as possible without going over 7. Use \(6 \times 1 = 6\) and set it up just like the last subtraction problem. \(7-6 = 1\)
   - Bring down the 2 from the dividend which results in the number 12 (the 1 came from the remainder of 7-6=1).
   - \(6 \times ? = 12\); ? = 2 The two becomes the next number in the quotient. 12-12=0. There is not a remainder.
   - The quotient (or answer) is 112.

Vocabulary
Quotient: The answer to a division problem.
Dividend: The number being divided.
Divisor: The number by which the dividend is divided.

HESI Hints:
The 5 represents the divisor, the 45 represents the dividend, and the 9 represents the quotient. It is the best not to leave a division problem with a remainder, but to end it as a fraction or a decimal point instead. To make the problem into a decimal, just add a decimal point and zeros at the end of the dividend and continue. If a remainder continues to occur, round to the hundredths place.
Example:
233.547 → 233.55 (the 7 rounds the 4 to a 5)

Steps to Division
1. Division
2. Multiplication
3. Subtraction
4. Bring down
Steps:
1. Set up the problem.
2. 5 does not divide into 1, but does divide into 17.
3. $5 \times 3 = 15$ Write the 3 in the quotient. (It is written above the 7 in seventeen because that is the last digit in the number).
   - $5 \times 3 = 15$
   - $17 - 15 = 2$
4. Bring the 4 down. Combine the 2 (remainder from 17-15) and 4 to create 24.
5. Five does not divide evenly into 24; therefore try to get close without going over.
   - $5 \times 4 = 20$
   - $24 - 20 = 4$
6. There is a remainder of 4, but there is not a number left in the dividend. Add a decimal point and zeros and continue to divide.
7. The quotient (or answer) is 34.8 (thirty-four and eight tenths).

Now You Try!

1. $132 \div 11 = $
2. $9,618 \div 3 = $
3. $2,466 \div 2 = $
4. $325 \div 13 = $
5. $5,024 \div 8 = $
6. $3,705 \div 5 = $
7. $859 \div 4 = $
8. $6,987 \div 7 = $
Math Review

Directions: 1) Take the portion of the test that follows. Label and do all work on front and back of same page as problem.
2) See pages 42-44 for answer key, to score portion.
3) Provide the following information hereon (page 16) for tutor-and-self-evaluation:

Total number of problems: _______ Add, subtract, multiply, divide decimals
Number correct: _______ Multiply number correct X 100 = _______
Divide by total number of problems = __________% 

Tutor will review for areas to work on in math.

Areas to work on: ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, ___________, 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## Addition and Subtraction of Decimals

### 2.6 + 3.1

| 2.6 | + | 3.1 | = | 5.7 |

**Steps:**
1. Line up the decimal points.
2. Add the tenths together: \( 6 + 1 = 7 \)
3. Add the ones together: \( 3 + 2 = 5 \)
4. Final answer: 5.7 (5 and 7 tenths).

### 5 + 12.34

| 12.34 | + | 5.00 | = | 17.34 |

**Steps:**
1. Line up the decimal points.
   - It might be difficult to line up the 5 because it does not have a decimal point. Remember that after the ones place; there is a decimal point. In order to help with organization, add zeros. Example: 5 = 5.00
2. Add the hundredths: \( 4 + 0 = 4 \)
3. Add the tenths: \( 3 + 0 = 3 \)
4. Add the ones: \( 2 + 5 = 7 \)
5. Add the tens: \( 1 + 0 = 1 \)
6. Final answer: 17.34 (17 and 34 hundredths).

### 7.21 – 4.01

| 7.21 | - | 4.01 | = | 3.20 |

**Steps:**
1. Line up the decimal points
2. Subtract the hundredths:
3. Subtract the tenths: \( 2 - 0 = 2 \)
4. Subtract the ones: \( 7 - 4 = 3 \)
5. Final answer: 3.20 (3 and 20 hundredths).

### 12 – 8.99

| 12.00 | - | 8.99 | = | 3.01 |

**Steps:**
1. Line up the decimal points.
2. Since twelve is a whole number, add a decimal point and zeros.
3. \( .00 - .99 \) cannot be subtracted; therefore, 1 must be borrowed from the 12 and regrouped.
4. The ones become 1, the tenths become 9, and the hundredths become 10.
5. Subtract the hundredths: \( 10 - 9 = 1 \)
6. Subtract the tenths: \( 9 - 9 = 0 \)
7. Subtract the ones: \( 11 - 8 = 3 \)
   - 1 was borrowed from the tens in order to subtract the 8.
8. Final answer: 3.01 (3 and 1 hundredth).

### Vocabulary:

Place value (regarding decimals):
Numbers to the right of the decimal point have different terms from the whole numbers to the left of the decimal point. Each digit in a number occupies a position; that position is called its place value.

### HESI Hints:

The word “and” when writing the number in words stands for the decimal.
Example: 5.7 (five and seven tenths)

### Now You Try!

1. \( 9.2 + 7.55 = \)
2. \( 2.258 + 64.58 = \)
3. \( 892.2 + 56 = \)
4. \( 22 + 3.26 = \)
5. \( 8.5 + 7.55 + 14 = \)
6. \( 18 + 7.55 = \)
7. \( 31.84 - 2.430 = \)
8. \( 21.36 - 8.79 = \)
## Multiplication of Decimals

### Steps:

1. Multiply 757 x 21 (do not worry about the decimal until the final product has been calculated).  
2. Starting from the right count the decimal places in both numbers and add together (2 decimal places).  
3. Move to the left 2 places and then place the decimal.

### Vocabulary:
Place value (regarding decimals): Numbers to the right of the decimal point have different terms from the whole numbers to the left of the decimal point. Each digit in a number occupies a position: That position is called its place value.

### Now you Try!

1. 0.003 x 4.23 =  
2. 98.26 x 8 =  
3. 8.03 x 2.1 =  
4. 250.1 x 25 =  
5. 0.1364 x 2.11 =  
6. 8.23 x 4 =  
7. 0.058 x 64.2 =  
8. 794.23 x .001 =
## Division of Decimals

### 34 \div 2.5

Steps:

1. Set up the division problem.
2. Move the decimal point in 2.5 one place to the right making it a whole number.
3. “What is done to one side must be done to the other side.” Move the decimal point one place to the right in 34, making it 340, and then bring the decimal point up into the quotient.
4. Divide normally:
   - \(25 \times 1 = 25\)
   - Subtract 34 – 25 = 9
   - Bring down the zero to make 90
   - \(25 \times 3 = 75\) This is as close to 90 as possible without going over
   - Subtract 90 – 75 = 15
   - Add a zero to the dividend and bring it down to the 15 making it 150
   - \(26 \times 6 = 150\)
5. The quotient is 13.6

### 2.468 \div 0.2

Steps:

1. Set up the division problem.
2. Move the decimal point in 0.2 over one place to the right making it a whole number. .02 is now 2.
3. Move the same number of spaces in the dividend. 2.468 is now 24.68.
4. Bring the decimal point up to the quotient in the new position.
5. Divide normally.

### Vocabulary:

- **Quotient**: The answer to a division problem.
- **Dividend**: The number being divided.
- **Divisor**: The number by which the dividend is divided.

### HESI Hints:

The number 25 is a whole number. Though this number could be written 25.0, decimals are usually not displayed after a whole number.
<table>
<thead>
<tr>
<th>Steps:</th>
<th>Now You Try!</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Set up the division problem.</td>
<td>1. 48 ÷ 0.4 =</td>
</tr>
<tr>
<td>2. Move the decimal point in the divisor until it is a whole number.</td>
<td>2. 144 ÷ 0.6 =</td>
</tr>
<tr>
<td>0.05 is now 5</td>
<td>3. 3.75 ÷ 0.4 =</td>
</tr>
<tr>
<td>3. Move the decimal in the dividend the same amount of spaces that were moved in the divisor.</td>
<td>4. 56.2 ÷ 0.2 =</td>
</tr>
<tr>
<td>0.894 is now 89.4</td>
<td>5. 2.6336 ÷ 0.32 =</td>
</tr>
<tr>
<td>4. Divide normally.</td>
<td>6. 591 ÷ 0.3 =</td>
</tr>
<tr>
<td></td>
<td>7. 0.72 ÷ 0.8 =</td>
</tr>
<tr>
<td></td>
<td>8. 0.132 ÷ 0.11 =</td>
</tr>
</tbody>
</table>
Math Review

Directions:

1) Take the portion of the test that follows. Label and do all work on front and back of same page as problem.
2) See pages 42-44 for answer key, to score portion.
3) Provide the following information hereon (page 21) for tutor-and self-evaluation:

Total number of problems: 48 ______ Fractions
Number correct: __________ Multiply number correct X 100=_________ +/-
Divide by total number of problems=_______ %

Tutor will review for areas to work on in math.
Areas to work on: __________, __________, __________, __________

Next step: Go to Math Review, Then Practice Tests 1 & 2
# Basic Fraction Vocabulary and Explanation

(terms, improper fractions, reducing, least common denominators, and mixed numbers)

<table>
<thead>
<tr>
<th>Terms</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numerator (part)</td>
<td>o The numerator is the top number of the fraction. It represents the part or pieces.</td>
</tr>
<tr>
<td>Denominator</td>
<td>o The denominator is the bottom number of the fraction. It represents the total or whole amount.</td>
</tr>
<tr>
<td>Fraction Bar</td>
<td>o The fraction bar is the line that separated the numerator and the denominator.</td>
</tr>
</tbody>
</table>

Example: \( \frac{21}{7} \) is solved using division.

(The top number goes inside the box. The bottom number goes outside the box.)

The answer is 3.

## Reducing Fractions using the Greatest Common Factor

| Reduce | 7 \( \div \) 7 = 1  
21 \( \div \) 7 = 3 |
|--------|------------------|
| Factors of 7 and 21: | 7 \{1,7\}  
21 \{1,3,7,21\} |
| The greatest common factor | The greatest common factor is 7; therefore divide the numerator and denominator by 7. |
| Reduce | \( \frac{12}{20} \) |
| Factors of 12 and 20: | 12 \{1, 2, 3, 4, 6, 12\}  
20 \{1, 2, 4, 5, 10, 20\} |
| The greatest common factor is 4 | The greatest common factor is 4 (they do have 1 and 2 in common, but the greatest factor is needed). |
| Reduce | \( \frac{12}{20} \div 4 = 3 \)  
20 \( \div \) 4 = 5 |

An improper fraction occurs when the numerator is larger than the denominator. An improper fraction should always be reduced or made into a mixed number.

### Description:

Factor: a number that divides evenly into another number.

Example: Factors of 12:

- 1 \times 12 = 12
- 2 \times 6 = 12
- 3 \times 4 = 12

12 \{1, 2, 3, 4, 6, 12\} Listing the factors helps determine the greatest common factor between two or more numbers.

\( \frac{1}{2} = \frac{3}{6} = \frac{4}{5} = \frac{5}{6} = \frac{7}{8} = \frac{9}{10} \)

(all represent a half)

(reducing fractions can also be called reducing a fraction to its lowest terms or simplest form.)
**Least Common Denominator (LCD):**

The Smallest multiple that two numbers share.

Determining the LCD is an essential step in the addition, subtraction, and ordering of fractions.

Example I: Find the least common denominator for \( \frac{3}{4}, \frac{7}{9} \)

Example II: Find the least common denominator for \( \frac{3}{12}, \frac{1}{8} \)

**Description:**

Steps for example I
1. List the multiples (Multiplication tables) of each denominator.
   - 4: 4 x 1 = 4, 4 x 2 = 8, 4 x 3 = 12, 4 x 4 = 16, 4 x 5 = 20, 4 x 6 = 24, 4 x 7 = 28, 4 x 8 = 32, 4 x 9 = 36, 4 x 10 = 40
   - 9: 9 (9, 18, 27, 36, 45, 54, 63, 72, 81, 90)
2. Compare each for the least common multiple.
   - 4 (4, 8, 12, 16, 20, 24, 28, 32, 36, 40)
   - 9 (9, 18, 27, 36, 45, 54, 63, 72, 81, 90)
3. The least common denominator between 4 and 9 is 36 (4 x 9 = 36 and 9 x 2 = 36).

Steps for Example II
1. List the multiples of each denominator and find the common multiples.
   - 12 (12, 24, 36, 48, 60, 72, 84, 96, 108, 120)
   - 8 (8, 16, 24, 32, 40, 48, 56, 64, 72, 80)
2. The least common denominator between 12 and 8 is 24 (12 x 2 = 24 and 8 x 3 = 24).

---

**Changing Improper Fractions into Mixed Numbers** (An improper fraction has a larger numerator than denominator.)

Example I.

\[
\frac{17}{5} \rightarrow 3\frac{2}{5}
\]

**Description:**

Steps for Example I
- We cannot leave the fraction in this form, therefore we turn it into a mixed number through division. (The top number goes in the box (numerator) the bottom number (denominator) stays out).
  - The 3 becomes the whole number.
  - The remainder becomes the numerator.
  - The denominator stays the same.

**Changing Mixed Numbers into Improper Fractions** (A mixed number has a whole number and a fraction combined.)

Example I

\[
5\frac{2}{3} \rightarrow 5 \times 3 + 2 = 17 \rightarrow \frac{17}{3}
\]

**Description:**

Steps for Example I
- To make a mixed number into an improper fraction, multiply the denominator and whole number together, and then add the numerator.
  - Place this new numerator over the denominator, which stays the same in the mixed number.
## Addition of Fractions

### Addition with common denominators

| \[
\begin{array}{c}
\frac{3}{7} + \frac{2}{7} \\
\hline
\frac{5}{7}
\end{array}
\] |
|---|

**Steps:**

1. Add the numerators together \(3 + 2 = 5\)
2. The denominator stays the same, 7.
3. Answer: \(\frac{5}{7}\) (five—sevenths)

### Addition with unlike denominators

| \[
\begin{array}{c}
\frac{1}{5} + \frac{7}{10} \\
\hline
\frac{9}{10}
\end{array}
\] |
|---|

**Steps:**

1. Find the least common denominator by listing the multiple of each denominator.
   - 5: 5, 10, 15, 20, 25, 30
   - 10: 10, 20, 30, 40, 50
   - The least common denominator is 10.
2. If the denominator is changed, the numerator must also be changed by the same number. Do this by multiplying the numerator and denominator by the same number.
   \[
   \begin{array}{c}
   \frac{1}{5} \times \frac{2}{2} = \frac{2}{10} \\
   \frac{7}{10} \times 1 = \frac{7}{10}
   \end{array}
   \]
3. Since the denominator of the second fraction is 10, no change is necessary.
4. Add the numerator together and keep the common denominator.
5. Reduce if necessary.

### Vocabulary:

- **Numerator:** the top number in a fraction
- **Denominator:** the bottom number in a fraction
- **Common Denominator:** two or more fractions that have the same denominator
- **Least common denominator:** the smallest multiple that two numbers share.

**NOTE:** never add denominators; they must be the same for addition and subtraction before you add or subtract.
Addition of Mixed Numbers

**Steps:**
1. Find a common denominator of 4 and 10 by listing the multiples of each.
   - 4: 4, 8, 12, 16, 20
   - 10: 10, 20, 30.
2. Calculate the new numerator of each fraction to correspond to the changed denominator.
3. Add the whole numbers together, and then add the numerators together. Keep the common denominator 20.
4. The Numerator is larger than the denominator (improper), change the answer to a mixed number. (review vocabulary if necessary).

**Now you try it!**

1. \( \frac{1}{12} + \frac{5}{12} = \frac{6}{12} = \frac{1}{2} \)
2. \( \frac{7}{21} + \frac{10}{21} = \frac{17}{21} \)
3. \( \frac{1}{2} + \frac{4}{5} = \frac{9}{10} \)
4. \( \frac{5}{7} + \frac{3}{14} = \frac{13}{14} \)
5. \( \frac{4}{5} + \frac{6}{7} = \frac{50}{35} = \frac{2}{1} \)
6. \( \frac{7}{8} + \frac{12}{8} = \frac{19}{8} \)
7. \( \frac{2}{9} + \frac{1}{9} = \frac{3}{9} \)
8. \( 12 \frac{1}{21} + 3 \frac{1}{3} = \frac{37}{21} \)
## Subtraction of Fractions

### Steps:

<table>
<thead>
<tr>
<th>Subtraction of Fractions with Common Denominators</th>
<th>Vocabulary:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steps:</strong></td>
<td>Numerator: the top number in a fraction.</td>
</tr>
<tr>
<td>1. Subtract the numerators:</td>
<td>Denominator: the bottom number in a fraction.</td>
</tr>
<tr>
<td>2. Keep the same denominator.</td>
<td>Common Denominator: two or more fractions that have the same denominator.</td>
</tr>
<tr>
<td>3. Reduce the fraction by dividing by the greatest common factor:</td>
<td>Least Common Denominator: the smallest multiple that two numbers share.</td>
</tr>
<tr>
<td></td>
<td>Factor: a number that divides evenly into another number.</td>
</tr>
<tr>
<td><a href="54x561.png">Image</a></td>
<td>Example: 12 ÷ 6 = 2 (6 and 2 are factors of 12).</td>
</tr>
<tr>
<td><strong>Vocabulary:</strong></td>
<td></td>
</tr>
<tr>
<td>Numerator: the top number in a fraction.</td>
<td></td>
</tr>
<tr>
<td>Denominator: the bottom number in a fraction.</td>
<td></td>
</tr>
<tr>
<td>Common Denominator: two or more fractions that have the same denominator.</td>
<td></td>
</tr>
<tr>
<td>Least Common Denominator: the smallest multiple that two numbers share.</td>
<td></td>
</tr>
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<td>Factor: a number that divides evenly into another number.</td>
<td></td>
</tr>
<tr>
<td>Example: 12 ÷ 6 = 2 (6 and 2 are factors of 12).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subtracting Fractions with Unlike Denominators</th>
<th>Steps:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steps:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Find the least common denominator by listing the multiples of each denominator:</td>
<td></td>
</tr>
<tr>
<td>2. Change the numerator to reflect the new denominator. (what is done to the bottom must be don’t to the top of a fraction).</td>
<td></td>
</tr>
<tr>
<td>3. Subtract the new numerators: 10-3 = 7. The denominator stays the same.</td>
<td></td>
</tr>
<tr>
<td><a href="252x493.png">Image</a></td>
<td></td>
</tr>
<tr>
<td><a href="72x358.png">Image</a></td>
<td></td>
</tr>
<tr>
<td><strong>HESI Hints:</strong></td>
<td></td>
</tr>
<tr>
<td>Fractions as a whole:</td>
<td></td>
</tr>
<tr>
<td>15/15 = One Whole</td>
<td></td>
</tr>
<tr>
<td>o Notice in problem 3 that we added 15 to both the numerator and the denominator. We did this because it is one whole and it is the same denominator.</td>
<td></td>
</tr>
</tbody>
</table>
## Borrowing from Whole Numbers

<table>
<thead>
<tr>
<th>5 \frac{2}{3} = 3 \frac{4}{5}</th>
<th><strong>Steps:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 \frac{2}{3} \times \frac{5}{15} = 5 \frac{10}{15}</td>
<td>1. Find the least common denominator</td>
</tr>
<tr>
<td>\frac{4}{5} + \frac{15}{15} = \frac{25}{15}</td>
<td>2. 12 cannot be subtracted from 10, therefore one must be borrowed from the whole number, making it 4, and add the borrowed one to the fraction.</td>
</tr>
<tr>
<td>3 \frac{4}{5} \times \frac{3}{15} = 3 \frac{12}{15}</td>
<td>3. Add the original numerator to the borrowed numerator (10 + 15 = 25)</td>
</tr>
<tr>
<td>\frac{25}{15} - \frac{3}{15} = 3 \frac{13}{15}</td>
<td>4. Now the whole number and the numerator can be subtracted.</td>
</tr>
</tbody>
</table>

### Now you try it!

| 3 - \frac{2}{20} = 20 | 1. |
| 28 - \frac{17}{37} = 37 | 2. |
| 17 - \frac{3}{25} = 5 | 3. |
| \frac{31}{54} - \frac{5}{9} = | 4. |
| 1 \frac{9}{10} - \frac{1}{5} = | 5. |
| 15 \frac{7}{18} - \frac{3}{9} = | 6. |
| 25 \frac{1}{7} - 12 \frac{5}{7} = | 7. |
| 30 \frac{1}{2} - 13 \frac{3}{4} = | 8. |
# Multiplication of Fractions

**Multiply**

\[
\begin{array}{c}
\frac{4}{5} \times \frac{1}{2} = \frac{1}{10} \times \frac{2}{5}
\end{array}
\]

### Steps:

1. Multiply the numerators together:
   - \( 4 \times 1 = 4 \)
2. Multiply the denominators together:
   - \( 5 \times 2 = 10 \)
3. Reduce the product by using the greatest common factor:
   - \( \frac{4}{10} \div \frac{2}{2} = \frac{2}{5} \)

### Vocabulary:

- **Numerator**: the top number in a fraction.
- **Denominator**: the bottom number in a fraction.
- **Factor**: a number that divides evenly into another number.

### Multiply

\[
\begin{array}{c}
\frac{5}{13} \times \frac{4}{13} = \frac{20}{13} = 1 \frac{7}{13}
\end{array}
\]

### Steps:

1. Make the whole number 5 into a fraction by placing a 1 as the denominator.
2. Multiply the numerators:
   - \( 5 \times 4 = 20 \)
3. Multiply the denominators:
   - \( 1 \times 13 = 13 \)
4. Change the improper fraction into a mixed number.

### HESI Hints:

- "Multiplying fractions is no problem. Top times top and bottom times bottom."
- To change an improper fraction into a mixed number, divide the numerator, \( \frac{20}{13} \), by the denominator, \( \frac{13}{13} \), to get \( 1 \frac{7}{13} \).

The quotient becomes the whole number. The remainder becomes the numerator, and the denominator stays the same.
### Multiply

\[
2 \frac{1}{8} \times 7 \frac{5}{6}
\]

\[
2 \frac{1}{8} \times 7 \frac{5}{6} = \frac{17}{8} \times \frac{47}{6} = \frac{799}{48}
\]

\[
\frac{799}{48} = 16 \frac{31}{48}
\]

### Steps:

1. Change the mixed numbers into improper fractions:

\[
2 \frac{1}{8} = \frac{(2 \times 8) + 1}{8} = \frac{17}{8}
\]

\[
7 \frac{5}{6} = \frac{(7 \times 6) + 5}{6} = \frac{47}{6}
\]

2. Multiply the numerators and denominators together:
   - \(17 \times 47 = 799\)
   - \(8 \times 6 = 48\) (denominator)
   - Change the improper fraction into a mixed number.

### Now You Try!

1. \( \frac{3}{5} \times \frac{2}{3} = \)
2. \( \frac{7}{9} \times \frac{1}{9} = \)
3. \( 6 \times \frac{4}{5} = \)
4. \( \frac{1}{2/5} \times 5 = \)
5. \( 2 \frac{1}{7} \times 1 \frac{3}{4} = \)
6. \( \frac{4}{5} \times 1 \frac{4}{6} = \)
7. \( 3 \frac{1}{3} \times 2 = \)
8. \( 1 \frac{8}{12} \times 4 \frac{1}{2} = \)
## Division of Fractions

### Steps:

1. Inverse or flip (or take the reciprocal) of the second fraction.
   - \( \frac{1}{2} \) \( \div \) \( \frac{3}{8} \) → \( \frac{8}{3} \)

2. Rewrite the new problem and multiply:
   - 1 \( \times \) 8 = 8 (numerator)
   - 2 \( \times \) 3 = 6 (denominator)

### 1/2 \( \div \) 3/8

<table>
<thead>
<tr>
<th>1 / 2 ( \div ) 3 / 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 / 2 ( \times ) 8 / 3 = 8 / 6</td>
</tr>
</tbody>
</table>

### 1 5/6 \( \div \) ¾

<table>
<thead>
<tr>
<th>1 5/6 ( \div ) 3/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/6 ( \div ) 3/4</td>
</tr>
<tr>
<td>11/6 ( \times ) 4/3 = 44/18</td>
</tr>
<tr>
<td>2 8/18 = 2 4/9</td>
</tr>
</tbody>
</table>

### 12 \( \div \) 2 3/8

<table>
<thead>
<tr>
<th>12/1 ( \div ) 19/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1 ( \times ) 8/19 = 96/19</td>
</tr>
<tr>
<td>5 1/19</td>
</tr>
</tbody>
</table>

### Steps:

1. Change the mixed number into an improper fraction:
   - \( 1 \, \frac{5}{6} = (1 \times 6) + 5 = 11/6 \)

2. Rewrite the new problem with the improper fraction.
3. Inverse or flip the second fraction.
4. Multiply the numerator and the denominators together:
   - 11 \( \times \) 4 = 44 (numerator)
   - 6 \( \times \) 3 = 18 (denominator)

5. Change the improper fraction into a mixed number. Reduce the mixed number.

### 12 \( \div \) 2 3/8

<table>
<thead>
<tr>
<th>12/1 ( \div ) 19/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/1 ( \times ) 8/19 = 96/19</td>
</tr>
<tr>
<td>5 1/19</td>
</tr>
</tbody>
</table>

### Vocabulary

**Numerator**: the top number in a fraction.

**Denominator**: the bottom number in a fraction.

**Reciprocals** pairs of numbers when multiplied together equal 1.

**Factor**: a number that divides evenly into another number.
“Dividing fractions— (flip) or inverse the second and multiply.”

Example:

\[
\frac{1}{2} ÷ \frac{3}{8} \rightarrow \text{Inverse } \frac{3}{8} \rightarrow \frac{8}{3}
\]

Then Multiply \(\frac{1}{2} \times \frac{8}{3}\)

\[
\frac{3}{8} \rightarrow \frac{8}{3} \quad \frac{3}{8} \times \frac{8}{3} = \frac{24}{24} = 1
\]

These two numbers are reciprocals of each other, because when they are multiplied together, they equal 1.

Now You Try!

1. \(\frac{4}{5} ÷ \frac{1}{7} = \)

2. \(\frac{12}{15} ÷ \frac{3}{5} = \)

3. \(\frac{7}{8} ÷ \frac{1}{6} = \)

4. \(1 ÷ \frac{1}{5} = \)

5. \(8 ÷ \frac{1}{4} = \)

6. \(2 \frac{1}{4} ÷ \frac{1}{6} = \)

7. \(10 ÷ 3 \frac{1}{3} = \)

8. \(12 \frac{1}{3} ÷ 2 = \)
### Changing Fractions to Decimals

<table>
<thead>
<tr>
<th>Change ¾ to a decimal</th>
<th>Steps:</th>
<th>Vocabulary:</th>
</tr>
</thead>
</table>
| ![Fraction to Decimal Step 1](image1) | 1. Change the fraction into a division problem.  
2. Add a decimal point after the 3 and add two zeros.  
   - Remember to raise the decimal into the quotient area.  
3. This is terminating decimal; therefore adding additional zeros is not necessary. | Fractions bar: the line in-between the numerator and denominator. The bar is another symbol for division. Terminating decimal: a decimal that is not continuous. |

<table>
<thead>
<tr>
<th>Change 5/8 to a decimal</th>
<th>Steps:</th>
<th>HESI Hints:</th>
</tr>
</thead>
</table>
| ![Fraction to Decimal Step 2](image2) | 1. Change the fraction into a division problem.  
2. Add a decimal point after the 5 and add two zeros.  
   - Remember to raise the decimal into the quotient area.  
3. If there is still a remainder, add another zero to the dividend and bring it down.  
4. The decimal terminates at the thousandths place. | “Top goes in the box, the bottom goes out.”  
This is a helpful saying in remembering that the numerator is the dividend and the denominator is the divisor.  
- If the decimal does not terminate, continue to the thousandths place and then round to the hundredths place.  
Example:  
7.8666 ➔ 7.87  
If the number in the thousandths place is 5 or greater, round the number in the hundredths place to the next higher number. But, if the number in the thousandths place is less than 5, do not round up the number in the hundredths place. |
<table>
<thead>
<tr>
<th>Change 2/3 to a decimal</th>
<th>Steps:</th>
<th>Now You Try!</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Change the fraction into a division problem.</td>
<td>Change the fraction into a decimal.</td>
</tr>
<tr>
<td></td>
<td>2. After the 2, add a decimal point and 4 zeros.</td>
<td>1. 1/5</td>
</tr>
<tr>
<td></td>
<td>3. The decimal continues (does not terminate); therefore, round to the hundredths place:</td>
<td>2. 2/5</td>
</tr>
<tr>
<td></td>
<td>- 0.666₆ → 0.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- It can also be written as $\overline{0.6}$ (the line is placed over the number that repeats)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. 3/8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. 4/5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. 1/3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. 1½</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. 3/10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. 2 7/8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change 2 3/5 to a decimal</th>
<th>Steps:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Change the fraction into a division problem.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. After the 3, add a decimal and two zeros.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Place the whole number in front of the decimal:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 2.6</td>
<td></td>
</tr>
</tbody>
</table>
## Changing Decimals to Fractions

### Change 0.9 to a fraction

**Steps:**
Knowing place values makes it very simple to change decimals to fractions.
1. The last digit is located in the tenths place; therefore the 9 becomes the numerator.
2. 10 becomes the denominator.

![0.9 as a fraction](image1)

### Change 0.02 to a fraction

**Steps:**
1. The 2 is located in the hundredths place.
2. 2 becomes the numerator, 100 becomes the denominator.
3. Reduce the fraction.

![0.02 as a fraction](image2)

### Change 0.25 to a fraction

**Steps:**
1. The 5 (always look at the last digit in the decimal) is located in the hundredths place.
2. 25 becomes the numerator and 100 becomes the denominator.
3. Reduce the fraction.

![0.25 as a fraction](image3)

### Change 3.055 into a fraction

**Steps:**
1. The rightmost 5 is located in the thousandths place.
2. 55 becomes the numerator and 1000 becomes the denominator. The 3 is still the whole number.
3. Reduce the fraction.

![3.055 as a fraction](image4)

### Vocabulary:
Place value: Numbers to the right of the decimal point have different terms from the whole numbers.

### Now You Try!

1. 0.08
2. 0.025
3. 0.125
4. 0.17
5. 0.3
6. 2.75
7. 7.07
8. 12.0001
Math Review

Directions:
1. Take the portion of the test that follows. Label and do all work on front and back of same page as problem.
2. See pages 42-44 for answer key, to score portion.
3. Provide the following information hereon (page 21) for tutor- and self-evaluation:

Total number of problems: 8
Ratio/Proportion
Number correct: ______ Multiply number correct X 100 = ______
Divide by total number of problems = ________% 

Tutor will review for areas to work on in math.
Areas to work on: ________, ________, ________, ________.

Next step: Go to Math Review,
Then Practice Tests 1 & 2
Ratio and Proportion

Change the decimal to a ratio

Steps:
1. Change the decimal to fraction.
2. Reduce the fraction.
3. The numerator is the first listed number.
4. Then write the colon.
5. Finally, place the denominator after the colon.

\[ 0.025 \rightarrow \frac{25}{1000} \rightarrow \frac{1}{40} \rightarrow 1:40 \]

Change the fraction to a ratio

Steps:
1. The numerator is the first listed number.
2. Then write the colon.
3. Finally, place the denominator after the colon.

\[ \frac{5}{6} = \frac{5}{6} \]

Solve the proportion (find the value of x)

Steps:
1. Rewrite the proportion as a fraction.
   (this might help to see the solution).
2. Notice that \( 7 \times 2 = 14 \); therefore \( 10 \times 2 = 20 \):
   - Multiply \( 14 \times 10 \) (two diagonal numbers). The answer is 140.
   - \( 140 \div 7 \) (divide by number without a pair. 14 and 10 are a pair. 7 and x are not pair, so divide by 7)
3. The answer is 20.

\[ \frac{7}{10}::\frac{14}{X} \]

\[ x = 20 \]

X: 63:: 24:72

Steps:
1. Rewrite the proportion as a fraction.
2. Multiply the diagonal numbers together:
   - \( 24 \times 63 = 1,512 \)
3. Divide the answer (1,512) by the Remaining number (the one with out a pair) \( 1,512 \div 72 = 21 \)
4. The answer is 21

\[ \frac{24}{63}::\frac{24}{72} \]

\[ x = 21 \]

Solve the proportion

Steps:
1. Rewrite the proportion as a fraction.
2. Multiply the diagonal numbers together:
   - \( 240 \times 12 = 2,880 \)
3. Divide the answer (2,880) by the remaining number (without a pair)
   - \( 2,880 \div 60 = 48 \)
4. The answer to x is 48.

\[ \frac{240}{60}::\frac{X}{12} \]

\[ x = 48 \]
Vocabulary:
**Ratio**: a relationship between two numbers.
**Proportion**: two ratios that have equal values.

HESI Hints:
Ratios can be written several ways.
  - As a fraction 5/12
  - Using a colon 5:12
  - In words 5 to 12

Proportion can be written two ways.
  - \( \frac{5}{12} = \frac{25}{60} \)
  - 5:12::25:60

(Remember, the numerator is listed first, then the denominator)

Now You Try!

1. \( \frac{22}{91} \)
2. \( \frac{19}{40} \)

Solve for X
3. \( 7:5::91:X \)
4. \( 7:9::X:63 \)
5. \( X:15::120:225 \)
6. \( 15:X::3:8 \)
7. \( 360:60::6:X \)
8. \( X:81::9:27 \)
**Math Review**

**Directions:**
1. Take the portion of the test that follows. Label and do all work on front and back of same page as problem.
2. See pages 42-44 for answer key, to score portion.
3. Provide the following information hereon (page 21) for tutor- and self-evaluation:

Total number of problems: 8
Number correct: ______ Multiply number correct X 100=________
Divide by total number of problems= ___________%

Tutor will review for areas to work on in math.

Areas to work on: ________, ________, ________, ________.

**Next step:** Go to Math Review, Then Practice Tests 1 & 2
## Percentages

<table>
<thead>
<tr>
<th>Change the decimal to a percent</th>
<th><strong>Steps:</strong></th>
<th><strong>Vocabulary:</strong></th>
</tr>
</thead>
</table>
| 0.13 → 13%                      | 1. Move the decimal point to the right of the hundredths place (two places).  
                                        2. Put the percent sign behind the new number. | **Percent:** per-hundred (part per hundred) |
| 0.002 → 0.2%                    | 1. Move the decimal point to the right of the hundredths place (two places-always!)  
                                          2. Put the percent sign behind the new number. Do not worry. It is still a percent- it is just a very small percent. | |
| 85.4% → .854                    | 1. Move the decimal two spaces away from the percent sign (towards the left).  
                                          2. Drop the percent sign; it is no longer a percent, but a decimal. | |
| 75% → .75                       | 1. The decimal point is not visible, but is always located after the last number.  
                                          2. Move the decimal two spaces away from the percent sign (towards the left).  
                                          3. Drop the percent sign; it is no longer a percent, but a decimal. | |
| Changing a fraction to a percent | 1. Change the fraction into a division problem and solve.  
                                          2. Move the decimal behind the hundredths place in the quotient.  
                                          3. Place a percent sign after the new number. | |
| \(\frac{5}{6}\) → .833           | 1. | |
| \(\frac{5}{6}\) → 83.3%         | 1. | |

### Now You Try!

#### Decimal to a percent
1. .98
2. .0068
3. .09

#### Percent to a decimal
4. 58%
5. 76.3%
6. .03%

#### Fraction to a percent
7. 9/10
8. 4/5
### Percentage

(Using the Percent Formula)

**What is 7 out of 8 as a percent?**

**Steps:**
1. Rewrite the problem using the percent formula.
2. Multiply the diagonal numbers together:
   \[ 7 \times 100 = 700 \]
3. Divide by the remaining (without a pair) number:
   \[ 700 \div 8 = 87.5\% \]

**What is 7 out of 8 as a percent?**

\[ \frac{7}{8} \times 100 = 87.5\% \]

**What is 68% of 45?**

**Steps:**
1. Rewrite the problem using the percent formula.
2. (of 45) 45 is the whole.
3. Multiply the diagonal numbers together:
   \[ 68 \times 45 = 3,060 \]
4. Divide by the remaining (without pair) number:
   \[ 3,060 \div 100 = 30.6 \]
5. \( x = 30.6 \) (this is not a percent - it is the part).

**What is 68% of 45?**

\[ x = \frac{68 \times 45}{100} = 30.6 \]

**18 is 50% of what number?**

**Steps:**
1. Rewrite the problem using the percent formula.
2. We are looking for the whole because “of” is indicating an unknown number.
3. Multiply the diagonal numbers together:
   \[ 18 \times 100 = 1,800 \]
4. Divide by the remaining number:
   \[ 1,800 \div 50 = 36 \]

**18 is 50% of what number?**

\[ 18 = \frac{50 \times 100}{180} = 36 \]

### HESI Hints:

**Percent Formula**

\[ \text{Part} = \% \times \text{Whole} \]

The word “of” usually indicates the whole portion of the percent formula.

Using this formula will help in all percent problems where there is an unknown (solving for \( x \)).

### Now You Try!

1. What is 15 out of 75 as a percent?
2. What is 2 out of 50 as a percent?
3. What is 20 out of 100 as a percent?
4. What is 28% of 100?
5. What is 95% of 20?
6. What is 15.5% of 600?
7. 2 is 20% of what number?
8. 65 is 25% of what number?
# Helpful Information to Memorize and Understand

Fractions, Decimals, Percents

<table>
<thead>
<tr>
<th>Fractions</th>
<th>Decimals</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{1}{2}$</td>
<td>0.50</td>
<td>50%</td>
</tr>
<tr>
<td>$\frac{1}{4}$</td>
<td>0.25</td>
<td>25%</td>
</tr>
<tr>
<td>$\frac{3}{4}$</td>
<td>0.75</td>
<td>75%</td>
</tr>
<tr>
<td>$\frac{1}{5}$</td>
<td>0.20</td>
<td>20%</td>
</tr>
<tr>
<td>$\frac{2}{5}$</td>
<td>0.40</td>
<td>40%</td>
</tr>
<tr>
<td>$\frac{3}{5}$</td>
<td>0.60</td>
<td>60%</td>
</tr>
<tr>
<td>$\frac{4}{5}$</td>
<td>0.80</td>
<td>80%</td>
</tr>
<tr>
<td>$\frac{1}{8}$</td>
<td>0.125</td>
<td>12.5%</td>
</tr>
<tr>
<td>$\frac{3}{8}$</td>
<td>0.375</td>
<td>37.5%</td>
</tr>
<tr>
<td>$\frac{5}{8}$</td>
<td>0.625</td>
<td>62.5%</td>
</tr>
<tr>
<td>$\frac{7}{8}$</td>
<td>0.875</td>
<td>87.5%</td>
</tr>
<tr>
<td>$\frac{1}{3}$</td>
<td>$0.33\overline{3}$</td>
<td>33.3%</td>
</tr>
<tr>
<td>$\frac{2}{3}$</td>
<td>$0.66\overline{6}$</td>
<td>66.6%</td>
</tr>
</tbody>
</table>
Helpful Information to Memorize and Understand

Roman Numerals

<table>
<thead>
<tr>
<th>I  = 1</th>
<th>XI = 11</th>
<th>D = 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>II = 2</td>
<td>XX = 20</td>
<td>M = 1,000</td>
</tr>
<tr>
<td>III = 3</td>
<td>XXX = 30</td>
<td>V = 5,000</td>
</tr>
<tr>
<td>IV = 4</td>
<td>XL = 40</td>
<td>X = 10</td>
</tr>
<tr>
<td>V = 5</td>
<td>L = 50</td>
<td></td>
</tr>
<tr>
<td>VI = 6</td>
<td>LX = 60</td>
<td>C = 100</td>
</tr>
<tr>
<td>VII = 7</td>
<td>LXX = 70</td>
<td></td>
</tr>
<tr>
<td>VIII = 8</td>
<td>LXXX = 80</td>
<td></td>
</tr>
<tr>
<td>IX = 9</td>
<td>XC = 90</td>
<td></td>
</tr>
<tr>
<td>X = 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example: 2003 = MMIII

Measurement Conversions

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 degrees Celsius = 32 degrees Fahrenheit (the freezing point of water)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 degrees Celsius = 212 degrees Fahrenheit (the boiling point of water)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length</th>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilometer = 1,000 meters</td>
<td>1 mile = 1,760 yards</td>
<td></td>
</tr>
<tr>
<td>1 meter = 100 centimeters</td>
<td>1 mile = 5,280 feet</td>
<td></td>
</tr>
<tr>
<td>1 centimeter = 10 millimeters</td>
<td>1 yard = 3 feet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 foot = 12 inches</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volume &amp; Capacity</th>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 liter = 1,000 milliliters</td>
<td>1 gallon = 4 quarts</td>
<td></td>
</tr>
<tr>
<td>1 milliliter = 1 cubic centimeter</td>
<td>1 gallon = 128 ounces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 quart = 2 pints</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 pint = 2 cups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 cup = 8 ounces</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 ounce = 30 cubic centimeters</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight &amp; Mass</th>
<th>Metric</th>
<th>Customary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilogram = 1,000 grams</td>
<td>1 ton = 2000 pounds</td>
<td></td>
</tr>
<tr>
<td>1 gram = 1,000 milligrams</td>
<td>1 pound = 16 ounces</td>
<td></td>
</tr>
</tbody>
</table>
Answer Key:  
Mathematics Section

Basic addition and subtraction (enter scores on pg. 10)
1. 1,959  2. 980  3. 1,511  4. 200  
5. 432  6. 459  7. 108  8. 12,011

Basic Multiplication (whole numbers) (enter scores on pg. 10)
1. 5,922  2. 1,950  3. 7,836  4. 44,330  
5. 11,130  6. 21,978  7. 189,150  8. 1,557,270

Basic Division (whole numbers) (enter scores on pg. 10)
1. 12  2. 3,206  3. 1,233  4. 25
5. 628  6. 741  7. 214.75  8. 998.14

Addition and Subtraction of Decimals (enter scores on pg. 16)
1. 16.75  2. 66.838  3. 948.2  4. 25.26
5. 30.05  6. 10.45  7. 29.41  8. 12.57

Basic Multiplication (decimals) (enter scores on pg. 16)
1. 0.01269  2. 786.08  3. 16.863  4. 6252.5
5. 0.287804  6. 32.92  7. 3.7236  8. 0.79423

Division of Decimals (enter scores on pg. 16)
1. 1.20  2. 2.40  3. 9.375  4. 2.81
5. 8.23  6. 1.970  7. 0.9  8. 1.2

Addition of Fractions (enter scores on pg. 16)
1. 1/2  2. 17/21  3. 1 3/10  4. 13/14
5. 1 23/35  6. 9 11/24  7. 6 4/9  8. 15 8/12

Subtraction of Fractions (enter scores on pg. 21)
1. 1/20  2. 11/37  3. 2/25  4. 1/54
5. 1 7/10  6. 15 1/18  7. 12 3/7  8. 16 3/4

Multiplication of Fractions (enter scores on pg. 21)
1. 2/5  2. 7/81  3. 4 4/5  4. 7
5. 3 3/4  6. 8  7. 6 2/3  8. 7 1/2
Division of fractions (enter scores on pg. 21)
1. 5 3/5  2. 1 1/3  3. 5 1/4  4. 5  
5. 32  6. 13 1/2  7. 3  8. 6 1/6

Changing Fractions to Decimals (enter scores on pg. 21)
1. 0.2  2. 0.4  3. 0.375  4. 0.8  
5. 0.3  6. 1.5  7. 0.3  8. 2.875

Changing Decimals to Fractions (enter scores on pg 21)
1. 2/25  2. 1/40  3. 1/8  4. 17/1000  
5. 3/10  6. 2 3/4  7. 7 7/100  8. 12 1/10000

Ratio and Proportions (enter scores on pg 34)
1. 22:91  2. 19:40  3. x = 65  4. x = 49  
5. x = 8  6. x = 40  7. x = 1  8. x = 27

Percentages (enter scores on pg. 37)
1. 98%  2. 0.68%  3. 9%  4. .58  
5. 0.763  6..0003  7. 90%  8. 80%

Percentages (using the percent formula) (enter scores on pg. 37)
1. 20%  2. 4%  3. 20%  4. .28  
5. 19  6. 93  7. 10  8. 260

See page 9 to enter overall score.
**Math Practice**
**Test 1 Face Sheet**

**Directions:** Students will

1. Take Practice Test 1
2. Correct all problems
3. Fill in information on this face sheet, which precedes entire Practice Test 1
4. Return work to HESI staff, arrange tutoring or conference to give go-ahead on taking actual HESI test

**Important**

1) Use the space provided on the paper for scratch paper; all work should be done on these pages for ease of assessment.
2) Fill in the blanks on the face sheet to assist the HESI staff in assessing your skills and weaknesses.

Your goal is to achieve 80% minimum on any exercise.

- To calculate Total number of correct answers, subtract number of incorrect answers from total number of problems.
- To calculate Percent correct: multiply number correct X 100, divide this number by total number of problems.

Example: 80 correct out of 100: 80 X 100 = 8000  
8000 divided by 100 = 80 or 80%

**OVERALL MATH PRACTICE TEST 1 SCORE**

Total number of problems: 101
Number correct: _________ Multiply number correct X 100 = _________
Divide by total number of problems = _______%

Tutor will review for areas to work on in math.

Areas to work on: __________, __________, __________, __________.
1. **Add, subtract, multiply, divide:**

   Total number of problems: 18
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

2. **Multiply, divide (by and into), add, subtract decimals**

   Total number of problems: 15
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

3. **Change fractions to decimals; decimals to fractions**

   Total number of problems: 10
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

4. **Add, subtract, multiply, divide fractions**

   Total number of problems: 20
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

5. **Percentage**

   Total number of problems: 18
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

6. **Ratio/Proportion**

   Total number of problems: 9
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct

7. **Conversions**

   Total number of problems: 5
   Total number of correct answers \( \times 100 = \) Divide this number by total number of problems. Percent correct
8. Rounding

Total number of problems: 6
Total number of correct answers X 100= Divide this number by total number of problems.

Percent correct

Next step: go to page 44 to enter overall score for Practice Test 1; then go to Practice Test 2.
Step one to Whole Number Skill  Practice Test I

These problems will help you find out if you need to work in the whole number section of this book. Do all the problems you can. Then fill in the chart on page 6 to see which page you should go to next.

1. 86,147 + 2,532 = 573,128
2. 24 + 933 =
3. 573
   1,268
   486
   +3,691

4. 897 - 357 = 539
5. 826 - 259 = 567
6. 40,020 - 29,316 = 10,704

7. 2,306 - 728 =
8. 30,000 - 2,907 =
9. 613 x 132

10. 84 x 56 =
11. 427 x 395 =
12. 489 x 53 =

13. 65 x 2,507 =
14. 331 ÷ 7 =
15. 3,147 ÷ 4 =

16. 1,029 ÷ 21 =
17. 6,057 ÷ 9 =
18. 2,433 ÷ 56 =
Answer Key

1. 88,679
2. 957
3. 6,018
4. 540
5. 567
6. 10,704
7. 1,578
8. 27,093
9. 80,916
10. 4,704
11. 168,665
12. 25,917
13. 162,955
14. 47 r2
15. 786 r 3
16. 49
17. 673
18. 43 r 25

Enter Score for practice test I on face sheet pages 44 – 46.
Step one to Decimal Skills Practice Test 1 Part 2

Do work on these pages.

1. \(.26 \times 3.9 = \)
2. \(12.9 \times 5 = \)
3. \(.0038 \times 62 = \)

4. \(.417 \times 2.3 = \)
5. \(46.4 \div 16 = \)
6. \(.222 \div .6 = \)

7. \(.406 \div .07 = \)
8. \(9 \div .18 = \)
9. \(148 \div 3.7 = \)

10. \(.58 + .9 + .737 = \)
11. \(.13 + 23.8 + 14 = \)
12. \(.68 + 10.24 + 5 = \)

13. \(3.4 - .75 = \)
14. \(8.1 - .238 = \)
15. \(12 - .608 = \)
Enter score for Practices Test 1 part 2 on face sheets page 44-46.
Do all work on these pages. Change each fraction to a decimal.

1. \( \frac{5}{6} = \)

2. \( \frac{9}{20} = \)

3. \( \frac{4}{7} = \)

4. \( \frac{5}{8} = \)

5. \( \frac{9}{16} = \)

Change each decimal or mixed decimal to a fraction or mixed number. Reduce each fraction.

1. \( .08 = \)

2. \( .625 = \)

3. \( .48 = \)

4. \( 3.36 = \)

5. \( 2.00004 = \)
**Answer Key**

1. .83 1/3
2. .45
3. .57 1/7
4. .62 ½ or .625
5. .56 ¼

1. 2/25
2. 5/8
3. 12/25
4. 3 9/25
5. 2 1/25,000

Enter score for practices test 1 part 3 on face sheets page 44 – 46.
Do all work on these pages.

1. \( \frac{3}{8} + \frac{3}{8} = \)
2. \( \frac{9}{16} + \frac{11}{16} = \)
3. \( \frac{5}{9} + \frac{2}{3} = \)

4. \( \frac{3}{7} + \frac{1}{2} = \)
5. \( \frac{9}{10} - \frac{7}{10} = \)
6. \( \frac{5}{8} - \frac{1}{3} = \)

7. \( 7.6 - 2\frac{5}{9} = \)
8. \( 8\frac{1}{5} - 2\frac{4}{5} = \)
9. \( 7\frac{4}{9} - 4\frac{5}{6} = \)

10. \( \frac{5}{9} \times \frac{2}{3} = \)
11. \( \frac{9}{10} \times \frac{8}{9} = \)
12. \( \frac{5}{9} \times 12 = \)

13. \( 15 \times 4\frac{2}{3} = \)
14. \( \frac{3}{5} \times 1\frac{1}{9} = \)
15. \( 2\frac{1}{4} \times 4\frac{2}{3} = \)

16. \( \frac{4}{5} \div \frac{8}{15} = \)
17. \( 4\frac{1}{6} \div \frac{5}{9} = \)
18. \( \frac{5}{12} \div 10 = \)

19. \( 6 \div 4\frac{1}{2} = \)
20. \( 3\frac{1}{2} \div 2\frac{4}{5} = \)
Answer Key

1. \( \frac{3}{4} \)
2. \( 6 \frac{1}{4} \)
3. \( \frac{2}{9} \)
4. \( \frac{13}{14} \)
5. \( \frac{1}{5} \)
6. \( \frac{7}{24} \)
7. \( 3 \frac{4}{9} \)
8. \( 5 \frac{2}{5} \)
9. \( 2 \frac{11}{18} \)
10. \( \frac{10}{27} \)
11. \( \frac{4}{5} \)
12. \( 6 \frac{2}{3} \)
13. \( 70 \)
14. \( \frac{2}{3} \)
15. \( 10 \frac{1}{2} \)
16. \( 1 \frac{1}{2} \)
17. \( 7 \frac{1}{2} \)
18. \( \frac{1}{24} \)
19. \( 1 \frac{1}{3} \)
20. \( 1 \frac{1}{4} \)

Enter score for practice test on cover sheets 44-46.
These problems will help you find out if you need to work in the percent section of this book. Do all the problems you can. When you are finished, look at the chart to see which page you should go to next.

1. Change each decimal to a percent.

\[
.6 = \quad .06 = \quad .248 = \quad .03 \frac{1}{3}
\]

2. Change each percent to a decimal.

\[
50\% = \quad 7\% = \quad 5 \frac{1}{4}\% = \quad 325\%
\]

3. Change each fraction to a percent.

\[
\frac{3}{10} = \quad \frac{1}{8} = \quad \frac{3}{7} = \quad \frac{4}{25} = \]

4. 15% of 140 =

5. 90% of 60 =

6. 72 is what % of 90?

7. 44 is what % of 132?

8. 90% of what number is 54?

9. 15% of what number is 39?
### Answers to Step One to Percent Skill Practice
#### Test 1, Part 5

<table>
<thead>
<tr>
<th></th>
<th>1. 60%</th>
<th>6%</th>
<th>24.8%</th>
<th>3.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. .5 or .50</td>
<td>.07</td>
<td>.0525</td>
<td>3.25%</td>
<td></td>
</tr>
<tr>
<td>3. 30%</td>
<td>12 ½% or 12.5%</td>
<td>42 6/7% or 42.85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 80%</td>
<td>33 1/3% or 33.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 60</td>
<td>260</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter score for 5 on pages 44-46
Practice Test 1 Part 6

Solve these proportions.

1. \( \frac{120}{4.2} = \frac{16}{X} \)

2. \( 750:250::X:5 \)

3. \( 2:5::X:10 \)

4. \( 0.125:0.5::X:10 \)

Read the following:

**Proportion**

Let us consider the ratios 3:5 and 12:20. If we write these ratios in fraction form, we have \( \frac{3}{5} \) and \( \frac{12}{20} \). Now if we apply the Principle of Equivalency of Fractions, we have \( 3 \times 20 = 5 \times 12 \). Thus the fraction \( \frac{3}{5} \) and \( \frac{12}{20} \) are equivalent.

Thus, we may write \( 3:5 = 12:20 \). This statement is called a proportion.

**Definition:** A proportion is a statement that two ratios are equivalent.

Example: (a) \( 1:2 = 4:8 \)

(b) \( 5:6 = 15:18 \)

Use the Principle of Proportion to determine which of the following are true proportions.

1. \( 5:7 = 15:21 \)

2. \( 6:11 = 12:24 \)

3. \( 1.4:3.5 = 4.6:11.5 \)

4. \( 63:81 = 77:99 \)

5. \( 64:28 = 96:40 \)
Convert the measurements in the following problems.

1. 5 yards = ________________ feet
2. 40 ounces = ________________ pounds
3. 20 quarts = ________________ gallons
4. 2 quarts = ________________ ounces
5. 3 pints = ________________ quarts
Answer Key

Answers for test 6: (Enter scores for 6 on face sheet page 44-46)

1. .56 1. True
2. 15 2. False
3. 4 3. True
4. 25 4. True
5. False

Answers for test 7: (Enter the scores for 7 on face sheet pages 44-46)

1. 15ft
2. 2.5lbs
3. 5 gals
4. 64 oz
5. 1.5 qt
You round dollars and cents in the same way you round whole numbers. You can round a monetary amount to the nearest ten cent (dime), nearest dollar, nearest ten dollars, and so on.

**Example:** Round $15.76 to the nearest dime.

1. **Step 1.** Underline the digit in the dimes column.  
   
   $ 15.76

2. **Step 2.** Look at the digit to the right of the 7. Since the digit 6 is more than 5, add 1 to the digit 7.  
   
   $ 15.86

3. **Step 3.** Now put zeros in all the places to the right of the 8  
   
   $15.80

**Answer:** $15.80

Round each number below as indicated.

1. 76 (tens place)
2. 164 (hundreds place)
3. 2,590 (thousands place)
4. $0.37 (nearest dime)
5. $3.48 (nearest dollar)
6. $67.09 (nearest ten dollar)
Answer Key

1. 80
2. 200
3. 3,000
4. $0.40
5. $3.00
6. $70.00

Enter score for 8 on face sheet pages 45-47
**Math Practice**  
**Test 2 Face Sheet**

**Directions:** Students will

1. Take Practice Test 2  
2. Correct all problems  
3. Fill in information on this face sheet, which *precedes* entire Practice Test 2  
4. Return work to HESI staff, arrange tutoring or conference to give go-ahead on taking actual HESI test

**Important:**

1) **Use the space provided on the paper for scratch paper; all work should be done on these pages for ease of assessment.**

2) **Fill in the blanks on the face sheet to assist the HESI staff assessing your skills and weaknesses.**

Your goal is to achieve 80% minimum on any exercise.

- To calculate Total number of **correct** answers, subtract number of incorrect answers from total number of problems.
- To calculate Percent correct: multiply number correct X 100, divide this number by total number of problems.

Example: 80 correct out of 100: 80 X 100 = 8000  
8000 divided by 100= 80 or 80%

**OVERALL MATH PRACTICE TEST 2 SCORE**

Total number of problems: 83  
Number correct: _________ Multiply number correct X 100=_________  
Divide by total number of problems= ______%  

Tutor will review for areas to work on in math.

Areas to work on:_________, __________, __________, __________.
MATH PRACTICE TEST 2

Add, subtract, multiply, divide:

Total number of problems __16____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Change decimals to fractions; change fractions to decimals; Multiply, divide (by and into), add, subtract decimals

Total number of problems __15____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Add, subtract, multiply, divide fractions

Total number of problems __16____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Percentage

Total number of problems __15____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Ratio/ Percentage

Total number of problems __11____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Conversion

Total number of problems __5____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________

Rounding

Total number of problems __5____
Total number of correct answers ____X100=_____. Divide this number by total number of problems
Percent correct__________
Next step: Go to page 62 to enter overall score for Practice Test 2; then go to Reading Comprehension sections.
1. \(425 + 34 =\)

2. \(732 + 9,255 =\)

3. \(6,927 + 434 + 56 =\)

4. \(83 - 9 =\)

5. \(800 - 73 =\)

6. \(12,603 - 9258 =\)

7. \(90,000 - 4,782 =\)

8. \(62 \times 34 =\)

9. \(536 \times 273 =\)

10. \(2,706 \times 75 =\)

11. \(39 \times 4,086 =\)

12. \(196 \div 4 =\)

13. \(779 \div 9 =\)

14. \(4,836 \div 52 =\)

15. \(7,224 \div 9 =\)

16. \(4,662 \div 63 =\)
Answer Key:
Test 2 Part 9

1. 459
2. 9,987
3. 7,417
4. 74
5. 727
6. 3,345
7. 85,218
8. 2,108
9. 146,328
10. 202,950
11. 159,354
12. 49
13. 86 r5
14. 93
15. 802 r6
16. 74
Decimal Review Practice Test 2 Part 10

Change each decimal or mixed decimal to a fraction or mixed number. Reduce each fraction.

1. \(0.3 = \)
2. \(3.75 = \)
3. \(0.625 = \)
4. \(9.32 = \)
5. \(1/5 = \)
6. \(1/8 = \)
7. \(4/25 = \)
8. \(3/50 = \)
9. \(0.29 + 0.8 + 0.626 = \)
10. \(0.0052 + 0.84 + 0.072 = \)
11. \(0.26 + 14.7 + 13 = \)
12. \(18 + 0.049 + 2.38 = \)
13. \(0.8 - 0.29 = \)
14. \(6.2 - 0.127 = \)
15. \(0.11 - 0.509 = \)
16. \(8.3 - 2.052 = \)
17. \(4.3 \times 0.38 = \)
18. \(18 \times 0.0074 = \)
19. \(6.5 \times 0.329 = \)
20. \(110.4 \div 23 = \)
21. \(0.621 \div 0.09 = \)
22. \(54 \div 27 = \)
23. \(138 \div 4.6 = \)
## Answer Key:
### Test 2 Part 10

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<table>
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<td>5/8</td>
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<tr>
<td>4</td>
<td>9 8/25</td>
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<td>6</td>
<td>.12 ½ or .125</td>
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<td>7</td>
<td>.16</td>
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<tr>
<td>8</td>
<td>.06</td>
</tr>
<tr>
<td>9</td>
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<td>20</td>
<td>4.8</td>
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<tr>
<td>21</td>
<td>6.9</td>
</tr>
<tr>
<td>22</td>
<td>200</td>
</tr>
<tr>
<td>23</td>
<td>30</td>
</tr>
</tbody>
</table>
1. \( \frac{7}{10} + \frac{1}{10} = \)
2. \( \frac{8}{15} + \frac{4}{5} = \)
3. \( \frac{1}{2} + \frac{5}{9} = \)
4. \( \frac{3}{2}/3 + \frac{4}{5} + \frac{5}{1}/4 = \)
5. \( \frac{11}{16} – \frac{5}{16} = \)
6. \( \frac{3}{5} – \frac{1}{6} = \)
7. \( 9 – 4 \frac{5}{12} = \)
8. \( 8 \frac{2}{5} – 2 \frac{2}{3} = \)
9. \( 9 \frac{1}{4} – 4 \frac{7}{12} = \)
10. \( \frac{3}{8} \times \frac{5}{7} = \)
11. \( \frac{5}{12} \times \frac{4}{5} = \)
12. \( 8 \times \frac{7}{10} = \)
13. \( \frac{5}{7} \times 4 \frac{2}{3} = \)
14. \( \frac{3}{10} \div \frac{2}{5} = \)
15. \( 3 \frac{3}{4} \div \frac{5}{6} = \)
16. \( \frac{7}{8} \div 3 = \)
Answer Key:  
Test 2 Part 11

1. $\frac{4}{5}$
2. $1 \frac{1}{3}$
3. $1 \frac{1}{18}$
4. $13 \frac{13}{24}$
5. $\frac{3}{8}$
6. $\frac{13}{30}$
7. $4 \frac{7}{12}$
8. $5 \frac{11}{15}$
9. $4 \frac{2}{3}$
10. $\frac{15}{56}$
11. $\frac{1}{3}$
12. $5 \frac{3}{5}$
13. $8$
14. $\frac{3}{4}$
15. $4 \frac{1}{2}$
16. $\frac{7}{24}$
1. Change each decimal to a percent.
   
   \( .3 = \) \hspace{1cm} \( .09 = \) \hspace{1cm} \( .455 = \)

2. Change each percent to a decimal.
   
   \( 48\% = \) \hspace{1cm} \( 3\% = \) \hspace{1cm} \( 7 \frac{1}{2}\% = \)

3. Change each fraction to a percent.
   
   \( \frac{9}{10} = \) \hspace{1cm} \( \frac{5}{12} = \) \hspace{1cm} \( \frac{4}{5} = \)

SOLVE

4. 16% of 125 =

5. 40% of 75 =

6. 4.8% of 800 =

7. 45 is what % of 75?

8. 36 is what % of 54?

9. 48% of what number is 60?
**Answer Key:**

*Test 2 part 12*

<p>| | | |</p>
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<td>9%</td>
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<tr>
<td>2</td>
<td>.48</td>
<td>.03</td>
</tr>
<tr>
<td>3</td>
<td>90%</td>
<td>41 2/3%</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>38.4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>66 2/3%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>125</td>
<td></td>
</tr>
</tbody>
</table>
In each of the following, what number should replace \( n \) to make each a true proportion?

1. \( n : 4 = 12 : 8 \)
2. \( 5 : 8 = 35 : n \)
3. \( 17 : n = 6 : 8 \)
4. \( 7 : n = 11 : 18 \)
5. \( 15 : 35 = 4 : n \)
6. \( 1/6 = ?/18 \)
7. \( 3/ ? = 6/8 \)
8. \( 50/ ? = 1/2 \)
9. \( 8/9 = ?/27 \)
Answer Key:  
Test 2 Part 13  

1. 6  
2. 56  
3. 22 2/3  
4. 11 5/11  
5. 9 1/3  
6. 3  
7. 4  
8. 100  
9. 24
Change each quantity to the unit indicated. As your first step in each problem identify the correct factor.

1. 3 lbs = ________ oz.
2. 3 qt. = ________ pt.
3. 12 pt. = ________ qt.
4. 80 oz. = ________ lb.

Many times, when smaller units are converted to larger units, there is a remainder.
As the example below show, this remainder is simply written as the number of smaller units left over.

**Example:** Change 7 feet to yards

Step 1. Divide 7 feet by the conversion factor 3

\[
7 \div 3 = 2 \text{ r1}
\]

Step 2. Write the remainder as the number of feet left over.

**Answer:** 7 feet = 2 yards 1 foot

5. 47 oz. = ________ lbs. ________ Oz.
Answer Key:
Test 2 Part 14

1. 48
2. 6
3. 6
4. 5
5. 2lbs. 15 oz
Steps for Rounding Decimal Practices Test 2 Part 15

1. Underline the digit in the place you are rounding to
2. Look at the digit to the right of the underlined digit. If the digit to the right is 5 or more, add 1 to the underlined digit. If the digit to the right is less than 5, leave the underlined number as is.
3. Discard the digits to the right of the underlined digit.

Example: Round 2.1749 to the thousandths place.

Step 1. Underline the digit in the thousandths place.

*Underline the 4: 2.174*

Step 2. Look at the digit to the right of the 4. The digit is 9. Since 9 is “5 or more,” add 1 to the underlined digit 4.

Add 1 to 4: 2.1759

Step 3. Discard the digit 9

**Answer: 2.175**

Round each amount below to the nearest cent. For each amount circle one of the two answer choices.

1. $.467: $.46 or $.47
2. $.953: $.95 or $.96
3. $6.875: $6.87 or $6.88

Round each decimal fraction below as indicated. The first problem in each row is done for you.

To the nearest tenth.

4. .52

5. .375

To the nearest hundredth.

6. .483

7. .725
Answer Key:
Test 1 Part 15

1. $.47
2. $.95
3. $6.88
4. .5
5. .4
6. .48
7. .73
READING COMPREHENSION FACE SHEET

Directions: Students will

1. Read explanations on how to answer reading comprehension questions and sharpen reading skills.
2. Take the “Sample Reading Test”; fill in information on face sheet.
3. Take the “Reading” test.
4. Correct all problems.
5. Fill in information on face sheet, which is in front of both tests.
6. Return work to HESI staff; arrange tutoring or conference to give go-ahead on taking actual HESI test.

Important:

1) Use the space provided on the paper for scratch paper; all work should be done on these pages for ease of assessment.
2) Fill in the blanks on the face sheet to assist the HESI staff in assessing your skills and weaknesses.

Your goal is to achieve 80% minimum on any exercise.

➢ To calculate Total number of correct answers, subtract number of incorrect answers from total number of problems.
➢ To calculate percent correct: multiply number correct X 100, divide this number by total number of problems.

Example: 80 correct out of 100: 80 X 100 = 8000   8000 divided by 100 = 80 or 80%

OVERALL READING COMPREHENSION TEST SCORE

Total number of problems: 47
Number correct: _______ Multiply number correct X 100 = _______
Divide by total number of problems = ____________% 

Tutor will review for areas to work on in reading comprehension.

Areas to work on: ________, ________, ________, ________, ________.
Reading Comprehension

1. Sample Reading Test

Total Number of questions __8__
Total Number of correct answers __________ X 100= __________ Divide this number by total number of questions

Percent Correct __________

2. Reading

Total Number of questions __39__
Total Number of correct answers __________ X 100= __________ Divide this number by total number of questions

Percent Correct __________

Next step: Go to page 79 to enter overall score for Reading Comprehension; then go to Vocabulary section.
HOW TO ANSWER READING COMPREHENSION QUESTIONS AND SHARPEN YOUR READING SKILLS (WITHOUT REALLY TRYING)

Read this the night before you take your exam. It will help you get the right answers on reading comprehension questions.

- When you get to the reading comprehension section, take a deep breath and;
  - Quickly read through the questions—not the answer choices, just the questions. You will be able to focus your reading knowing what the questions are.
  - Read the passage, paying attention to details. Be alert for what the author thinks is important, by noting phrases like *Of importance is...*, *Do not overlook...*, and *Note that*.
  - Read each question carefully to determine what is being asked. Watch for all-inclusive words like *always, never, all, only, every, absolutely, completely, none, entirely, no*. These words will affect your answer.
  - Read all answer choices. Eliminate obviously incorrect choices. Do not jump to choose the first answer that looks correct. Refer to the passage to get the best answer.
  - Avoid spending too much time on any one question. If you’re stuck on a question, choose from the answers left after eliminating the obviously incorrect ones and move on.

SHARPEN READING SKILLS

There are seven reading skills tested on the HESI exam; the basic tenet emphasized here is: **Reading proactively to keep focused.** The skills and how to improve them are described below:

1. Identify the main idea – key to understanding what you’re reading and what to remember.
   a. Ask “What is the passage about and what point is the author making about the topic?”
   b. Summarize the paragraph in your head after you read it.
   c. Visualize as you read—picture the information being projected on a big screen TV.
   d. Remember that main ideas can be found in the beginning, middle, or end of a paragraph or passage.
   e. Look at details, examples, causes, reasons to find implied, or unstated, main ideas.
2. **Identify supporting details**—examples, added information which support main idea.
   a. Pick key word from the question and scan the passage for location of the answer.
   b. Identify details by transition words like *one, next, another, first, finally*.

3. **Finding the Meaning of Words in Context**—look for context clues, which are words or sentences surrounding unknown word (s): the provide information on meaning for the reader.

   Context clues include:
   
   a. **Definition**: meaning of word put in parentheses, or stated in following sentence.
   b. **Synonym**: more familiar word given, which means same as unknown word.
   c. **Antonym**: word given with opposite meaning of unknown word; watch for words that signal an antonym, like although, but, instead.
   d. **Restatement**: unknown word paraphrased, or restated in sentence using more familiar words.
   e. **Examples**: examples illuminate meaning of unknown word.
   f. **Explanation**: additional information explains unknown word.
   g. **Word structure**: knowledge of meanings of prefixes, suffixes, and roots can help reader make educated guess about unknown word.

4. **Identifying a Writer’s Purpose and Tone**—purpose can be to entertain, inform, persuade. Tone is author’s attitude or feelings towards topic. Choice of words is clue to both.

   Ask these questions:  
   1. Who is the intended audience?  
   2. Why did the author write this?

   **Persuade**: means trying to change thinking, encouraging reader to buy something, convince someone to vote a certain way. “Connotation” refers to emotions, feeling reader attaches to words.

   Identify words in the passage for negative or positive connotation to determine why the author wrote the passage, how he/she is trying to manipulate the reader’s feelings. For example, if the passage is about a beautification project, the author might describe it using positive connotation (and tone), in words like inspired, visionary, to get the reader to agree. Or, the writer may describe the project using negative connotation (and tone) with words like wasteful, foolhardy in opposition.
Inform: passages written to inform are less biased, with fewer words that have positive or negative connotation. Supportive text is factual and allows reader to form own opinion of subject matter.

5. Distinguishing Between Fact and Opinion --- facts can be proven to be right or wrong. Ex. The world is round. Opinions are personal statements which cannot be proven. Ex. “Titanic” was the best movie ever made.

Critical reading means looking at choice of words to determine whether writer is stating fact or opinion.

Facts: concrete words including measurable data, colors. Ex. Joe weighs 215 pounds. Sally’s dress is red.

Opinions: evaluative or judgmental words (good, better, best, worst); abstract words (love, envy, hate); and statements that speculate about future events are considered opinions.

6. Making Logical Inferences --- inferences are not stated in the reading; they are educated, logical guesses made by the reader --- “reading between the lines” --- based on the available facts, information, and reader’s knowledge and experience. Key to making inferences is to be sure the facts and evidence in the reading supports the inferences.

7. Summarizing --- summary is shortened version of passage with some supporting details, that is important information only. Leaves out unnecessary and redundant information.

This type of question takes the longest for students. Three rules to follow:

a. Summary to include main ideas from beginning, middle, and end of passage
b. Summary presented in chronological (as it happened) order.
c. Summary must have accurate information. False information automatically rules out choice.
According to news reports, more senior citizens are accruing credit card debt that ever before. One reason given for the increase is that many seniors simply did not save enough money for retirement. Another reason given is the high cost of prescription drugs that are not covered by Medicare. Although the possibility of a prescription drug benefit being added to Medicare was a big issue in the last presidential campaign, it does not appear that any legislation will be enacted soon.

Meanwhile, some seniors are spending 50 – 60% of their incomes on prescription drugs. With utilities, mortgage payments, and groceries, it is easy to see why some seniors are forced to use their credit cards. According to SRI Consulting Business Intelligence in Princeton, NJ., a research and consulting firm, the average debt of households headed y someone over 65 rose from $8,000 in 1992 to $23,000 in 2000. That is an increase of 188%.

Another reason given for seniors ending up in so much debt is the fact that they don’t understand how credit cards work and by simply paying off the minimum, most of the payment goes toward interest. Whatever the reason, many seniors today have to abandon formerly held conservative attitudes toward debt and join the millions of Americans who buy on credit.

Congress should enact Medicare legislation that helps make prescriptive drugs more affordable for seniors. It doesn’t seem fair that those who have worked hard all their lives should have to stress over finding enough money to pay their bills in their so called “golden years.” Write your congressional representatives and encourage them to enact the appropriate legislation.

1. What is the main idea of the passage?
   A. The high cost of prescription drugs is a difficult burden for seniors to bear.
   B. Credit Card debt for seniors rose 188% from 1992 to 2000.
   C. Senior citizens today did not save enough money for their retirement years.
   D. There are several reasons why many senior citizens today are in credit card debt.

2. Which of the following is not listed as a detail in the passage.
   A. Seniors did not save enough for retirement.
   B. Many seniors spend money gambling.
   C. The cost of prescription drugs is a drain on the seniors’ income.
   D. Seniors don’t always understand how credit cards works.

3. What is the meaning of the word “accruing” as used in the first paragraph?
   A. Something that increases or accumulates.
   B. Something that attaches itself like a parasite.
   C. Something that annoys.
   D. Something that describes emotion.

4. What is the author’s primary purpose in writing this essay?
5. Identify the overall tone of the essay.
   A. Encouraging
   B. Optimistic
   C. Pessimistic
   D. Angry

6. Which of the following statements is an opinion?
   A. More seniors are accruing credit card debt than ever before.
   B. The high cost of prescription drugs has added to the credit card debt of seniors.
   C. Congress should enact Medicare legislation to make prescription drugs more affordable.
   D. Some seniors get into debt because they do not understand how credit cards work.

7. Which statement would not be inferred by the reader?
   A. Some seniors are having a difficult time paying their bills.
   B. Seniors should not allow their children to use their credit cards.
   C. Some seniors did not plan well for their retirement.
   D. Some seniors have to use credit cards to pay for their food and other basic necessities.

8. Choose the best summary of the passage.
   A. Prescription costs are keeping seniors in credit card debt. Many seniors were not financially prepared for retirement. Some seniors do not understand how credit cards work. There has been a huge increase in credit card debt for households headed by seniors.
   B. More seniors have credit card debt than ever before. Some seniors don’t understand how credit cards work. The high cost of prescription drugs has caused many to use their credit cards for basic necessities. Something needs to be done to help the seniors enjoy their retirement years.
   C. The average debt for households headed by seniors has decreased in the last decade. Many seniors hold conservative attitudes about debt, but they are being forced to abandon their ideas out of necessity. Congress could help seniors by enacting legislation that would reduce the cost of prescription drugs.
   D. More seniors hold credit card debt that ever before. Reasons for this include the lack of adequate financial planning for retirement, the high cost of prescription drugs, and the misunderstanding of how credit cards work. Congress needs to enact legislation to help today’s seniors with the high cost of prescription drugs.
Answer Key:
Reading Comprehension
Practice Test

1. D (main idea)
2. B (supporting details)
3. A (meaning of word in context)
4. B (author’s purpose)
5. C (author’s tone)
6. C (fact and opinion)
7. B (inferences)
8. D (summary)

Bibliography

Enter score on face sheets pages 79—80
Our planet Earth is divided into seven separate layers. The outer layer is called the “crust” and appears to be approximately twenty miles thick. Next in line are the four layers of the “mantle.” These layers vary in thickness from 250 to 1000 miles. The remaining two layers are divided into the “outer core” and “inner Core.” The thickness of the outer core has been determined to be slightly more than 1200 miles, while that of the inner core is slightly less than 800 miles. Scientists calculate the location and depth of these layers by measuring and studying the speed and direction of earthquake waves. They have also determined that both temperature and pressure are much greater at the core than at the crust.

113. The thickest portion of the earth is the
   a) crust   b) outer core   c) mantle   d) inner core

114. How many separate layers does the earth have?
   a) two   b) twenty   c) seven   d) four

115. Which of the following is correct?

116. You would expect to find the kind of information in this passage in
   a) an encyclopedia.   b) a science book.   c) neither of these.   d) Both of these.

117. In going from the surface to the center of the earth, in which order would you pass through the layers?
   a) crust, outer core, mantle, inner-core   b) out core, inner core, crust, mantle   c) outer core, crust, inner core, mantle   d) crust, mantle, outer core, inner core

118. The word vary, as underlined and used in this passage, most nearly means
a) Stabilize  
b) Increase  
c) Range  
d) Arbitrate  

119. Which of the following is correct?  
   a) Scientists know the exact thickness of the crust.  
   b) Scientists believe they know the thickness of the crust.  
   c) The thickness of the crust cannot be determined.  
   d) Scientists cannot agree as to the thickness of the crust.  

120. In comparing the core with the crust, you would find that at the core,  
   a) temperature and pressure are less  
   b) pressure is greater, temperature is less  
   c) temperature is greater, pressure is less  
   d) temperature and pressure are greater  

121. The word *slightly*, as underlined and used in this passage, most nearly means  
   a) scarcely  
   b) considerably  
   c) a little  
   d) at least  

122. The word *remaining*, as underlined and used in this passage, most nearly means  
   a) previous  
   b) outer  
   c) last  
   d) prior  

The man is in utter darkness. Only the *wavering* beam of light from his flashlight pierces the blackness. The air, damp and cold, smells or dank, unseen, decaying material.  

The man stumbles over stones, splashes into a hidden puddle. He bangs into a cold rocky wall. The flashlight cocks upward, and suddenly, the air is filled with the flutter of thousands of wings and the piping of tiny animal wails. He ducks, startled, then grins. He’s found what he’s looking for—bats!  

For this man is a “spelunker,” another name for someone who explores caves for the fun of it. Spelunkers have discovered new caves. Some have formed clubs, sharing safety knowledge, developing new techniques, and teaching novices.  

For spelunkers believe that earth’s inner spaces are as exciting as the universe’s outer spaces.  

123. The first two paragraphs of this passage describe a cave’s  
   a) rocks  
   b) depth  
   c) atmosphere  
   d) streams  

124. The word *wavering*, as underlined and used in this passage, most nearly means  
   a) swaying  
   b) steady  
   c) strong  
   d) shining  

125. The author of this passage is most likely a  
   a) spelunker  
   b) cave scientist  
   c) medical doctor  
   d) magazine writer  

126. The cave the man was exploring was probably  
   a) large and dry  
   b) deep underground  
   c) near the surface  
   d) dangerous  

127. According to this passage, what started the bats to suddenly fly about?  
   a) the spelunker  
   b) the damp and cold air  
   c) the flashlight  
   d) the sudden noise  

GO ON TO THE NEXT PAGE
128. The man ducked when the bats flew because he was
   a) angry.
   b) afraid.
   c) surprised.
   d) hurt.

129. The word utter, as underlined and used in this passage, most nearly means
   a) bovine
   b) unspeakable
   c) oppressive
   d) great

130. According to this passage, spelunkers ignore
   a) safety rules.
   b) light.
   c) discomfort.
   d) other spelunkers.

131. A good title for this passage would be
   a) “Batty About Bats.”
   b) “Spelunkers—Underground Explorers.”
   c) “Inner Space.”
   d) “The life of a Spelunker.”

132. According to this passage, which word would most nearly describe spelunkers?
   a) experimental
   b) cautious
   c) antisocial
   d) adventurous

Litterbugs have a bad reputation, but the biggest litterbugs in history have, in fact, been very helpful to mankind.

For glaciers, in ancient times and today, are the greatest creators and distributors of litter. Of course, they don’t drop tin cans, paper cups, and pop bottles; they dump rocks, boulders, sand, gravel, and mud all over the landscape, and its this glacial debris that has helped create some of the worlds most fertile farmland, such as that in America’s Midwest.

Geologists describe glacial ice as true rock, different only in that it melts more easily than other rock. Because glacial ice is moving rock, it scrapes, bangs, and tears at the terrain over which it moves, breaking off chunks of all sizes. When the ice melts, the debris drops, and, if it is rich in minerals, creates fertile soil when it erodes.

It’s too bad human litterbugs aren’t as useful!

133. The richness of the oil in America’s Midwest can be attributed, in part, to
   a) heavy annual rainfalls
   b) scientific analysis
   c) human litterbugs
   d) ancient glacial debris

134. Although the author of this passage describes glaciers as litterbugs, his attitude toward glaciers is one of
   a) love
   b) gratitude
   c) admiration
   d) fear

135. Which of the following is correct?
   a) Glacial ice is full of pop bottles.
   b) Glaciers are harmful.
   c) Glaciers erode the terrain.
   d) Glacial ice may be full of fertile soil.

136. According to this passage, history’s biggest litterbugs are
   a) glaciers
   b) people
   c) rocks
   d) bulldozers

137. The words most fertile, as underlined and used in this passage, most nearly mean
   a) most icy
   b) flattest
   c) most rocky
   d) best growing

138. Good soil contains
   a) rocks
   b) minerals
   c) vitamins
   d) melted ice
139. A good title for this passage might be
A) “A Lovely Litterbug.”
B) “The Destructive Forces of Glaciers.”
C) “Glaciers – Then and Now.”
D) “The History of Glaciers.”

140. This passage implies that the litter human beings drop is
A) Useless.
B) Ugly.
C) Uninteresting.
D) Unimportant.

141. The word terrain, as underlined and used in this passage, most nearly means
A) Rock.
B) Terror.
C) View.
D) Land.

142. It could be said, on the basis of this passage, that glaciers change the
A) Earth’s atmosphere.
B) Pollution rate.
C) Mineral content of rocks.
D) Earth’s geography.

The superstition of witchcraft, which most people laugh at today, is still a matter of mystery and speculation.

Hundreds of thousands of people in Europe who were accused of being witches were executed during the Middle Ages and even as late as the early eighteenth century. Their deaths probably resulted from hysterical fears. Yet the judges undoubtedly were sincere in their desire to eliminate what they thought was a real danger. Some modern psychologists have theorized that so-called witches actually were dangerous. In essence, they say that a person who believes in the powers of witchcraft can be affected emotionally or physically he may even die—because of a “witch’s spell.”

When Europeans immigrated to America, they brought their beliefs with them. There were a number of witchcraft trials in Massachusetts during the 1600s; however after the execution of twenty Salem “witches” in 1692, prosecution for witchcraft didn’t survive long in the New World.

Most people in the civilized world no longer believe in witchcraft. Nonetheless, the subject is fascinating for many people. As an example, the TV show “Bewitched” was a very popular program for more than five years.

143. This passage was probably printed in
A) history book.
B) A magazine.
C) A psychology book.
D) An encyclopedia.

144. According to this passage, the mystery of witchcraft is
A) a major problem for psychologists.
B) o very little interest today.
C) still unsolved.
D) a major problem for sincere judges.

145. One of today’s reminders of ancient witchcraft beliefs is.
A) Halloween.
B) April Fools Day
C) The use of brooms
D) The death penalty for certain crimes.

146. Which group can we be sure has had members who believed in witchcraft?
A) judges
B) TV producers
C) Psychologists
D) Newspaper reporters

147. This passage calls witchcraft a “Superstition.” Which of these would also be a superstition?
A) “Many hands make light work.”
B) “Breaking a mirror brings bad luck.”
C) “Eating sweets causes pimples.”
D) “Great oaks from little acorns grow.”

148. According to some psychologists, persons who do believe in witchcraft
A) can be harmed by it.
B) Tend to laugh at it today.
C) Are crazy.
D) Tend to be dangerous.
150. The word *fascinating*, as underlined and used in this passage, most nearly means
   a) frightening.
   b) Enjoyable
   c) Frustrating
   d) Interesting

151. This passage suggests that what you believe.
   a) can hurt you
   b) should be based on facts
   c) does not affect you
   d) changes as you grow older

152. A good title for this passage might be
   a) “Witchcraft—Fact of Fiction?”
   b) “The End of Witchcraft.”
   c) “Witchcraft in the New World.”
   d) “The Powers of Witchcraft.”
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VOCABULARY FACE SHEET

1. Take the Vocabulary tests, which are divided into “everyday” and “medical terminology.”
2. Correct all questions. Use dictionary to enhance study after correcting test.
3. Fill in information on face sheet, which is in front of all tests.
4. Study lists of medical terminology following quizzes. Use medical dictionary or regular dictionary to enhance knowledge of medical terminology.
5. Return work to HESI staff, arrange tutoring or conference to give go-ahead on taking actual HESI test.

Important: Fill in the blanks on the face sheet to assist the HESI staff in assessing your skills and weaknesses.

Your goal is to achieve 80% minimum on any exercise.

➢ To calculate Total number of correct answers, subtract number of incorrect answers from total number of problems
➢ To calculate Percent correct: multiply number correct X 100, divide this number by total number of problems.

Example: 80 correct out of 100: 80 X 100= 8000 8000 divided by 100= 80 or 80%

OVERALL VOCABULARY TEST SCORE

Total number of problem: 1) Everyday 100
Number correct: __________ Multiply number correct X 100 = ________
Divide by total number of problems= __________ %

Total number of problems: 2) Medical Terminology 125
Number correct: __________ Multiply number correct X 100 = ________
Divide by total number of problems= __________%

Tutor will review for areas to work on in vocabulary.

Areas to work on: __________, __________, __________, __________.
1. Test 5 (everyday)
Total number of Questions __10__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

2. Exams 7, 10-14 (everyday)
Total number of Questions __90__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

3. Spelling (everyday)
Total number of Questions __50__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

4. Multiple Choice Quiz (medical terminology)

5. Chapter One
Total number of Questions __25__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

6. Chapter Two
Total number of Questions __25__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

7. Chapter Three
Total number of Questions __25__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______

8. Chapter Four
Total number of Questions __25__
Total number of correct answers _____ \times 100 = ____ Divide this number by total number of questions
Percent Correct_______
Chapter Twenty-One:

Total Number of questions: 25
Total Number of Correct answers \( \times 100 = \) Divide this number by total number of questions
Percent Correct

Next step: Go to page 93 to enter overall scores for vocabulary section; then go to grammar section.
Test 5

For numbers 21 through 30 select the word that best fits into the blank.

21. The managers were _________ by the public response to the company’s successful sales campaign.
   F. petrified
   G. recognized
   H. gratified
   J. amused

22. The efforts of the rescue team were _________ by the lack of equipment.
   A. accelerated
   B. hampered
   C. resolved
   D. facilitated

23. Early settlers were _________ by wandering bands of cruel outlaws.
   F. harassed
   G. protected
   H. supervised
   J. comforted

24. The dense hedge of thorns and barbed wire formed a(n) _________ barrier around the ranch house.
   A. attractive
   B. impenetrable
   C. colorful
   D. fragile

25. Only a _________ could be sent to the office for a pair of paper stretchers.
   F. technician
   G. researcher
   H. consumer
   J. novice

26. During the fire drill, the well-trained students left the building in a(n) _______ fashion.
   A. orderly
   B. rowdyish
   C. amateurish
   D. cordial

27. In the long run, the will of the majority must _________ in a democracy.
   F. vanish
   G. falter
   H. prevail
   J. recede

28. The _________ spring weather brought thousands of vacationers to the national parks.
   A. cold
   B. variable
   C. humid
   D. balmy

29. The children tried to _________ their loving grandparents into taking them to the fairgrounds.
   F. enforce
   G. cajole
   H. coerce
   J. overpower

30. Our form of government is a monument that will _________ the memory of our founding generation.
   A. perpetuate
   B. erase
   C. consolidate
   D. alter
Answer Key: 
Reading Vocabulary 
Test 5

1—10 There is only one synonym of each given word.
11—20 There is only one antonym for each given word.

21. (H) A successful sales campaign leads to gratified managers.
22. (B) Lack of equipment justifies hampered.
23. (F) Bands of cruel outlaws points toward harassed settlers.
24. (B) Dense hedge of thorns and barbed wire would be impenetrable.
25. (J) A pair of paper stretchers would fool only a novice.
26. (A) Well-trained students would leave in an orderly fashion.
27. (H) The key phrase is in a democracy, where the will of the majority must ultimately prevail.
28. (D) Thousands of vacationers will be lured out doors by balmy weather.
29. (G) The Children would try to persuade their grandparents by being nice, or making promises; they would cajole them.
30. (A) Our democratic republic will perpetuate the memory of our founding fathers.

Enter score on face sheets pages 93-95
Reading Comprehension: Exam 7

DIRECTIONS: In each of the phrases below, study the underlined word and decide which of the words or phrases given as choices has most nearly the SAME meaning. Blacken the box with the same letter as the meaning of the underlined word.

EXAMPLE:
A cheerful face
a. sad    b. bashful    c. rough    d. happy

Box d has been blackened because a cheerful face is a happy face, rather than a sad, bashful, or rough face. The letter before “happy” is “d”; therefore, box d is blackened.

1. A massive structure
   a. trifling    b. tremendous    c. isolated    d. lovely

2. Drawing nigh
   a. away    b. near    c. up    d. water

3. A startling observation
   a. remark    b. view    c. service    d. claim

4. Punctual arrival
   a. late    b. early    c. on time    d. pointed

5. Quelled the uprising
   a. located    b. incited    c. approved    d. put down

6. Radiated light
   a. sent forth    b. obscured    c. rained    d. heated

7. Replenish the supply
   a. use up    b. drain off    c. lose    d. replace

8. Of the finest quality
   a. number    b. price    c. grade    d. worthlessness

9. Pierce the skin
   a. penetrated    b. hand from    c. burn    d. stretch

10. A fine opportunity
    a. decision    b. education    c. truth    d. chance

11. A notable success
    a. outstanding    b. notice    c. taking notes    d. musical

12. For medicinal purposes
    a. final    b. digestive    c. solving    d. curative

13. A minute detail
    a. hourly    b. very small    c. timed    d. quick

14. Necessary requirements
    a. essential    b. plausible    c. partial    d. fulfilling

15. An obedient pupil
    a. rebellious    b. happy    c. dutiful    d. bright

16. A rugged pioneer
    a. colonist    b. conservative    c. radical    d. flower

17. A quaint restaurant
    a. dirty    b. unpleasant    c. a la carte    d. old-fashioned

18. The reformed convict
    a. reasonable    b. change for the better    c. evil    d. guilty

19. A respected doctor
    a. highly regarded    b. experienced    c. famous    d. engaged in research

20. Quickened our interest
    a. explained    b. modified    c. deadened    d. aroused
Directions: In the exercise below, complete each sentence by selecting the one right answer from the five choices that follow, and then blackening the box containing the letter of the right answer, as in the example below.

EXAMPLE:
A narrative is a
a. composition  b. musicale  c. story  d. mystery  e. vehicle

1. A manual control would be operated
a. automatically  b. rapidly  c. quietly  d. by hand  e. electrically

2. An objective report by a committee would be
a. prejudiced  b. subjective  c. personal  d. offensive  e. fair

3. A colorful pageant is
a. a public entertainment  b. a party  c. a disorderly gathering  d. client  e. platter

4. To preserve our liberties means to __________________ our liberties.
   a. harm  b. safeguard  c. change  d. enjoy  e. desecrate

5. A man prowess is
a. proud  b. excessively humble  c. extraordinary able  d. cowardly  e. none of these

6. His pugilistic skill means __________________ skill.
   a. athletic  b. musical  c. lack of  d. boxing  e. none of these

7. A medical quack is a(n)
   a. fraud  b. expert  c. hypnotist  d. boxing  e. none of these

8. A corrupt regime is
   a. unheard of  b. expert  c. hypnotist  d. specialist

9. To resist tyranny is to __________________ tyranny.
   a. fight against  b. submit to  c. suffer  d. worship  e. none of these

10. A robust woodsman is
   a. anemic  b. sturdy  c. pallid  d. frail  e. none of these
EXAM 11

DIRECTIONS: Each sentence below contains an underlined word. If the underlined word is used correctly in the sentence, circle the T to the right of the question. If the underlined word is used incorrectly, circle the F to the right of the question.

EXAMPLE:
An uninhabited country is one which has a huge population.

1. A rapier is a short, broad sword.
2. Rebellion is a peaceful change of government.
3. I can recollect events that happened when I was five years old.
4. As security guard, you need a person of reliability.
5. A repentant drunkard feels no remorse for his wasted life.
6. Snakes and lizards are reptiles.
7. X represents an unknown quantity in algebra.
8. A scoundrel resorts to trickery.
9. Restraint is required when criticizing our benefactors.
10. Plaid is a colorless strip of material used as trimming.
11. By using a ruse, he was able to gain his ends openly and fairly.
12. The light snow scorched her face gently.
13. Sculpture is one of the fine arts, the art of building beautiful structures.
14. The knife was placed in a sheath to keep it away from the children.
15. After a day in the desert, our food was sodden.
17. Spontaneous applause came all night from the paid applauders.
18. The cattle remained clam during the stampede.
19. There is no more steadfast friend than a fickle girl.
20. His suave manners were uncouth.

EXAM 12

DIRECTIONS: For the underlined word in each phrase at the left, select the lettered word or phrase that means most nearly the SAME. Print the letter of the correct answer in the space at the right.

EXAMPLE:
An overcast sky a. brilliant b. cloudy c. windy d. clear e. starry Answer: b

2. With great tact a. ability to say and so the right thing b. inconvenience c. exertion d. facility at touching e. piece of information.
3. His urgent message a. gloomy b. rebellious c. denial d. delaying e. important
4. The bright sash a. bloody wound b. ribbon c. dance step d. battle
5. The talented singer a beautiful b. boastful c. skillful d. scout e. poor
6. Her untimely remark a. disgusting b. late c. unorthodox d. ill-timed e. embarrassing
7. A vague answer a. complete b. stylish c. stupid d. unclear e. scarlet
8. The vacant lot a. parking b. stupid c. empty d. whole e. cultivated
9. The unabridged dictionary a. incomplete b. book of bridges c. Webster’s d. unadulterated e. unshortened
10. A typical teenager a. rock ‘n’ roll b. mature c. happy d. delinquent e. average
11. The significant event a. unhappy b. wedding c. following d. important e. last
12. A noble sentiment a. feeling b. sadness c. cry d. lament e. silliness
13. The turmoil in the hills a. quiet b. quiet c. girl d. elephant e. crowd
14. Unsound reasoning a. ringing b. untested c. intelligent d. precocious e. faulty
15. The moving van a. truck b. furniture c. house d. man e. wheels
16. A vision of success a. story b. break c. dream d. fulfillment e. example
17. With uncommon fervor a. ordinary b. dreamy c. noisy d. unrealistic e. more than usual
18. the important __________
a. business man  b. result  c. method of communication
d. piece of business  e. proceeding

18.______

19. the third __________
a. Song  b. repetition  c. lyric
d. portion of a poem  e. scale

19.______

20. the subsequent __________
a. in place of  b. following  c. preceding  
d. important  e. significant

20.______

EXAM 13

DIRECTIONS: For the underlined word in each phrase at the left, select the lettered word or phrase that means most nearly the SAME. Print the letter of the correct answer to the right.

EXAMPLE:
An ambitious man
a. lazy  b. energetic  c. purposeful
d. cruel  e. fine

Answer: b

1. The traditional costume:  
a. young  b. peasant  c. tattered  
d. dance  e. handed down through the ages

1.______

2. utilize your talents!  
a. make use of  b. utilities  c. sing  
d. modernize  e. undo

2.______

3. his vigorous objection:  
a. unhappy  b. poorly timed  c. vintage  
d. wrong  e. tasteful

3.______

4. the vulgar remark  
a. coarse  b. poorly timed  c. vintage  
d. wrong  e. tasteful

4.______

5. her sullen mood  
a. happy  b. silly  c. brooding  
d. sunny  e. distasteful

5.______

6. the spacious garden  
a. empty  b. outdoor  c. roomy  
d. lovely  e. springy

6.______

7. terminate the business  
a. start  b. remodel  c. refinance  
d. exterminate  e. put an end to

7.______

8. the upright position  
a. erect  b. upside down  c. immovable  
d. wrong  e. sloppy

8.______

9. veto the bill  
a. sign  b. withdraw  c. debate on  
d. pass  e. refuse to sign

9.______

10. variety of acts  
a. show  b. hall  c. sequence  
d. poor quality

10.______

EXAM 14

DIRECTIONS: In each line below you will find one italicized word followed by five words or phrases lettered a to e. In each case choose the word or phrase that is closest in meaning to the italicized word. Then blacken with your pencil the space with the letter of the word or phrase you have selected.

EXAMPLE:
Oblique  
a. blinking  b. scarce  c. level
d. criss-cross  e. diagonal

Answer: b

1. stump  
a. glide  b. walk heavily  c. imprint  
d. strut  e. blast loose

1.______

2. sukk  
a. sink  b. come after  c. drive a horse carriage  
d. go off alone  e. commute

2.______

3. surge  
a. swell  b. take a view of  c. influence  
d. remove  e. excel

3.______

4. taunt  
a. placate  b. mimic  c. tangle  
d. mock  e. tighten

4.______

5. tempo  
a. storm  b. largo  c. rhythm  
d. tendency  e. symphony

5.______

6. thrive  
a. dishevel  b. push  c. bounce  
d. confess  e. flourish

6.______

7. triangular  
a. mathematical  b. perpendicular  c. having four angles  
d. three-sided  e. trapezoidal

7.______

8. tumult  
a. wretchedness  b. noise and confusion  c. exciting anticipation  
d. multiplication  e. deep and violent anger

8.______

9. tyrant  
a. despot  b. ruler  c. sovereign  
d. viceroy  e. premier

9.______

10. unique  
a. 100%  b. not basic  c. alone of its kind  
d. changeable  e. extraordinarily large

10.______
Answer Key:
VOCABULARY

EXAM 7
1. b 5. d 9. a 13. b 17. d
2. b 6. a 10. d 14. a 18. b
3. a 7. d 11. a 15. c 19. a
4. c 8. c 12. d 16. a 20. d

EXAM 8

EXAM 9

EXAM 10
1. d 3. a 5. c 7. a 9. a
2. e 4. b 6. d 8. e 10. b

EXAM 11

EXAM 12
1. e 5. c 9. e 13. b 17. e
2. a 6. d 10. e 14. e 18. d
3. e 7. d 11. d 15. a 19. d
4. b 8. c 12. a 16. c 20. b

EXAM 13
1. e 3. a 5. c 7. e 9. e
2. a 4. d 6. c 8. a 10. d

EXAM 14
1. b 3. a 5. c 7. d 9. a
2. d 4. d 6. e 8. b 10. c

EXAM 15
1. b 3. b 5. d 7. d 9. c
2. c 4. e 6. a 8. e 10. b

EXAM 16
1. c 5. d 9. d 13. d 17. c
2. d 6. a 10. b 14. b 18. a
3. d 7. a 11. d 15. c 19. b
4. b 8. c 12. a 16. d 20. c

EXAM 17
1. e 5. c 9. b 13. b 17. b
3. d 7. a 11. b 15. a 19. c
4. b 8. a 12. e 16. d 20. e

EXAM 18
1. d 9. b 17. b 25. c 33. c
2. d 10. b 18. a 26. d 34. d
3. a 11. c 19. d 27. d 35. a
4. a 12. d 20. c 28. d 36. a
5. b 13. b 21. d 29. d 37. d
6. c 14. d 22. d 30. c 38. a
7. d 15. a 23. d 31. b 39. c
8. d 16. d 24. d 32. b 40. a

EXAM 19
1. b 9. c 17. c 25. b 33. d
2. c 10. b 18. b 26. a 34. c
3. b 11. a 19. b 27. a 35. d
4. d 12. c 20. d 28. b 36. b
5. a 13. b 21. c 29. a 37. a
6. c 14. a 22. a 30. b 38. c
7. b 15. a 23. c 31. a 39. d
8. d 16. b 24. a 32. b 40. b

EXAM 20
1. d 7. b 13. c 19. b 25. d
2. d 8. a 14. d 20. d 26. a
3. b 9. a 15. b 21. a 27. b
4. d 10. c 16. d 22. b 28. c
5. c 11. d 17. a 23. c 29. c
6. b 12. d 18. c 24. c 30. b

Enter score on face sheets pages 93-95
Spelling

Exercise 4  
*Circle the correct choice*

1. He (deserted/ desserted) his unit and (than/ then) fled to Chicago.
2. (Were/ We’re/ Where) can I find a (quite/ quiet) place to study?
3. Of the (to/ too/ two) proposals, the (later/ latter) seems preferable.
4. We found the (consul/ council/ counsel) to be a man of (principal/ principle).
5. (A lot of/ Allot of/ Many) people take up jogging to try to (loose/ lose) weight.
6. (Your/ You’re) supposed to swallow four teaspoons as (your/ you’re) daily (does/ dose).
7. I thought I had mastered the “I before e” (principal/ principle), but (than/ then) they told me about the exceptions.
8. (Its/ It’s) (later/ latter) than you think.
9. The thieves came back (later/ latter) and took everything (accept/ except) the radio.
10. It’s no longer (quiet/ quite) so unusual for a (woman/ women) to be elected to public office.

Exercise 5  
*Circle the correct choice*

1. They plan to (a lot allot) $1500 for the redecoration of their (dining/ dinning) room.
2. Let there be (peace/piece) in (are/ our) time.
3. Each year, an increasing number of (woman/ women) (desert/ dessert) their families.
4. (Were/ We’re/ Where) do you think (were/ we’re/ where) going to get the money?
5. I found it impossible to remain (stationary/stationery), so I walked rapidly back and (forth/ fourth).
6. I (hear/ here) (your/ you’re) sorry you (choose/ chose) this (coarse/course).
7. Do you think children (are/our) (conscience/ conscious) of (there/ their/ they’re) parents’ sacrifices for them?
8. The learning process is greatly (affected/ effected) by student (moral/ morale).
9. He is a person (whose/ who’s) (advice/ advise) I value.
10. Inflation and unemployment are the (principal/ principle) concerns of Americans; world (peace/piece) is considered almost a (miner/ minor) problem in comparison.
Exercise 6

Circle the correct choice

1. Prolonged unemployment (affects/ effects) one’s (moral/ morale).
2. A (complement/ compliment) is sometime more welcome (than/ then) a kiss.
3. Following your (advise/advice), I applied to the bank for a (personal/ personnel) loan.
4. As a coal (miner/ minor), he (does/dose) run an increased risk of developing lung disease.
5. I suggest that (there/ their/ they’re) behavior can hardly be described as (moral/ morale).
6. If I (hear/ here) one more complaint, (your/ you’re) going to stay at home.
7. (Whose/ Who’s) been using my (personal/ personnel) (stationary/ stationery)?
8. If I had to (chose/ choose) between the two, I’d follow the (later/ latter) (coarse/course) of action.
9. Two helpings of (desert/ dessert) should be (quiet/ quite) sufficient.
10. (To/ Too/ Two) many people don’t look (were/ we’re/ where) they’re going.

Exercise 7

Circle the correct choice

1. I would like to have (desert/ dessert) as the first (coarse/course).
2. (Your You’re) going to have to follow the dictates of your own (conscious/ conscience).
3. Surely (its/ it’s) a question of (principal/ principle).
4. The student asked the guidance counselor to (advice/ advise) her on a (personal/ personnel) matter.
5. The young musician gratefully (accepter/ excepted) our (complements/ compliments).
6. Some (miners. Minors) have little difficulty in convincing a bartender that (their/ there/ they’re) of age.
7. She (choose/ chose) to work in the (dining/ dinning) room of the Holiday Inn.
8. Judging by the pinging sounds I (hear/ here), I’d say (your/ you’re) car needs a tune-up.
9. I’d rather write an essay (than/ then) do an oral report in front of (are/ our) whole class.
10. The salt was (to/ too/ two) (coarse/ course) (to/too/ two) pass through the holes of the shaker.
Exercise 10

Circle the correct choice

1. I made the turn and (than/ then) saw the sign: “No left turn; buses (accepted/ excepted.)”

2. If you let the dog run(loose/ lose), you must (accept/ except) the consequences.

3. (Whose/ Who’s) turn is it to find the (complement/ compliment) of the angle?

4. We were (to/ too/ two) late for dinner but in time for (desert/ dessert).

5. I accept your (advice/ advise) for the sound (council/ consul/ counsel) it is.

6. (Their/ There/ They’re) are many children who believe the tooth fairy will come if they (loose/lose) a tooth.

7. A (stationary/ stationery) store is (were/ we’re/ where) you’ll find carbon paper.

8. The (miner/ minor) skirmish before the game had the (affect/ effect) of making us determined to win.

9. Edmund Burke believed manners were more important ( than/ then) (morales/ morals).

10. State colleges are governed by a (consul/ council/ counsel) (who’s/ whose) function is to (advice/ advise) the Board of Education.
### Answer Key: Spelling

#### Exercise 4

1. Deserted, then  
2. Where, quiet  
3. two, latter  
4. consul, principle  
5. many, lose  
6. You’re, your, dose  
7. Principle, then  
8. It’s, later  
9. later, except  
10. quiet, woman

#### Exercise 5

1. allot, dining  
2. peace, our  
3. women, desert  
4. Where, we’re  
5. stationary, forth  
6. here, you’re, chose, course  
7. are, conscious, their  
8. affected. Morale  
9. whose, advice  
10. principal, peace, minor

#### Exercise 6

1. affects, morale  
2. compliment, than  
3. advice, personal  
4. miner, does  
5. their, moral  
6. hear, you’re  
7. who’s, personal, stationery  
8. choose, latter, course  
9. dessert, quite  
10. Too, where

#### Exercise 7

1. dessert, course  
2. You’re, conscience  
3. it’s, principle  
4. advise, personal  
5. accepted, compliments  
6. minors, they’re  
7. chose, dining  
8. Hear, your  
9. than, our  
10. too, coarse, to

Enter score on face sheet page 93-95


Answer Key:

Spelling

Exercise 9

1. quite, you’re
2. choose, whose
3. Here, is
4. Many, personnel, morale
5. too, we’re
6. then, your
7. coarse, desert
8. conscious, effect
9. its, does
10. conscious, effects

Exercise 10

1. then excepted
2. loose, accept
3. Whose, complement
4. too, dessert
5. advice, counsel
6. there, lose
7. stationery, where
8. minor, effect
9. than, morals
10. council, whose, advise

Enter score on face sheet pages 93-95
MULTIPLE CHOICE QUIZ

In the box write the letter of the choice that is the definition of the term or best answers the question. There is only one correct answer for each question.

1. Gastrectomy: .................................................  
   A) Gastric resection  
   B) Intestinal incision  
   C) Tumor of the stomach  
   D) Incision of the stomach  
   E) Resection of the intestine  

2. Osteitis: ......................................................  
   A) Incision of a bone  
   B) Removal of bone  
   C) Incision of a joint  
   D) Inflammation of a joint  
   E) Inflammation of a bone  

3. Cystoscopy: ................................................  
   A) Study of cells  
   B) Visual examination of cells  
   C) Removal of a sac of fluid  
   D) Removal of the urinary bladder  
   E) Visual examination of the urinary bladder  

4. Hepatoma: ..................................................  
   A) Incision of the kidney  
   B) Tumor of the liver  
   C) Blood mass  
   D) Inflammation of the liver  
   E) Red blood cells  

5. Which of the following is not an endocrine gland?  
   A) Thyroid gland  
   B) Adrenal gland  
   C) Ovary  
   D) Mammary gland  
   E) Pituitary gland  

6. Iatrogenic: ..................................................  
   A) Pertaining to produced by treatment  
   B) Produced by the mind  
   C) Cancer producing  
   D) Pertaining to producing a tumor  

7. Electroencephalogram: ....................................  
   A) Record of electricity in the brain  
   B) Record of electricity in the heart  
   C) X-ray of the brain  
   D) Record of sound waves in the brain  
   E) X-ray of the heart and brain  

8. Diagnosis: ...................................................  
   A) Is made after prognosis  
   B) Is a guess as to the patient’s condition  
   C) Is a prediction of the course of treatment  
   D) Is made on the basis of complete knowledge about the patient’s condition  
   E) Is a treatment of the patient  

9. Cancerous tumor: .........................................  
   A) Hematoma  
   B) Adenoma  
   C) Carcinoma  
   D) Carcinogenic  
   E) Neurotomy  

10. Microscopic examination of living tissue: ..........  
    A) Incision  
    B) Pathology  
    C) Biopsy  
    D) Autopsy  
    E) Resection  

11. pertaining to the brain: ................................  
    A) Cerebral  
    B) Cephalic  
    C) Renal  
    D) Cardiac  
    E) Neural  

12. Removal of gland ........................................  
    A) Gastrotomy
B) Gastric  
C) Hepatic resection  
D) Nephric section  
E) Adenectomy

13. Decrease in numbers of red blood cells:  
A) Anemia  
B) Erythrocytosis  
C) Thrombocytosis  
D) Leukemia  
E) Leukocytosis

14. Pathologist:  
A) One who examines x-rays  
B) One who operates on the urinary tract  
C) One who performs autopsies and reads biopsies  
D) One who operates on the kidney  
E) One who treats diseases with chemicals

15. Pain in a joint:  
A) Ostealgia  
B) Arthritis  
C) Osteoarthritis  
D) Arthroalgia  
E) Arthralgia

16. Increase in numbers of malignant white blood cells:  
A) Leukocytosis  
B) Leukemia  
C) Erythremia  
D) Thrombocytosis  
E) Erythrocytosis

17. Instrument to view the eye:  
A) Ophthalmoscopy  
B) Ophthalmoscope  
C) Ophthalmology  
D) Ophthalmoscope  
E) Ophthalmoscopy

18. A platelet  
A) Hematoma  
B) Thrombosis  
C) Leukocyte  
D) Erythrocyte

19. Abnormal condition of the mind:  
A) Psychosis  
B) Psychosis  
C) Psychogenic  
D) Encephalopathy  
E) Adenoma

20. Inflammation of the nose:  
A) Arthrosis  
B) Hepatitis  
C) Nephritis  
D) Dermatosis  
E) Rhinitis

21. Study of cells:  
A) Pathology  
B) Cytology  
C) Cystology  
D) Dermatology  
E) Urology

22. Pertaining to through the liver:  
A) Subrenal  
B) Transdermal  
C) Transhepatic  
D) Subhepatic  
E) Hepatoma

23. Abnormal condition of the kidney:  
A) Neurological  
B) Neuralgia  
C) Nephrometry  
D) Neural  
E) Nephrosis

24. Incision of a bone:  
A) Sarcoma  
B) Pathogenic  
C) Osteotomy  
D) Ostectomy  
E) Endoscopy
25. High levels of sugar in the blood: 

A) Hematoma  
B) Hypodermic  
C) Hypoglycemia  
D) Hyperglycemia  
E) Hypogastric
Multiple Choice Quiz

1) A
2) E
3) E
4) B
5) D
6) A
7) A
8) D
9) C
10) C
11) A
12) E
13) A
14) C
15) E
16) B
17) D
18) D
19) B
20) E
21) B
22) C
23) E
24) C
25) D
Chapter Two

MULTIPLE CHOICE QUIZ

Name: _________________________________

In the box write the letter of the choice that is the definition of the term or best answers the question. There is only one correct answer for each question.

1. The process by which food is burned to release energy:
   O A) Nuclear energy
   B) Anabolism
   C) Phagocytosis
   D) Catabolism
   E) Protein synthesis

2. Part of the cell where formation of proteins occurs:
   O A) Genes
   B) Chromosomes
   C) Endoplasmic reticulum
   D) Cartilage
   E) Cell membrane

3. Sum of the chemical processes in a cell:
   O A) Anabolism
   B) Metabolism
   C) Protein synthesis
   D) Catabolism
   E) A and E

4. Picture of nuclear structures arranged in numerical order:
   O A) Biopsy
   B) X-ray
   C) Electroencephalogram
   D) Sonogram
   E) Karyotype

5. Part of a cell where catabolism primarily occurs:
   O A) Cell membrane
   B) Nucleus
   C) Mitochondria
   D) Genes
   E) Endoplasmic reticulum

6. Allows materials to pass into and out of the cell:
   O A) Cytoplasm
   B) Cell membrane
   C) Chromosomes
   D) Mitochondria
   E) Nucleus

7. Genes are composed of:
   O A) Chromosomes
   B) Ribosomes
   C) Hemoglobin
   D) Deoxyribonucleic acid (DNA)
   E) Mitochondria

8. Muscular wall separating the abdominal and thoracic cavities:
   O A) Mediastinum
   B) Diaphragm
   C) Pleura
   D) Pericardium
   E) Peritoneum

9. The space in the chest between the lungs is called the:
   O A) Peritoneum
   B) Esophagus
   C) Pleural cavity
   D) Mediastinum
   E) Retroperitoneal space

10. Adipose means pertaining to:
    O A) Cartilage
    B) Bone
    C) Fat
    D) Skin
    E) Nervous tissue

11. Throat:
    O A) Trachea
    B) Coccyz
    C) Larynx
    D) Esophagus
    E) Pharynx

12. Sarcoma:
    O A) Part of the backbone
112

13. Craniotomy: ......................................................
A) Incision of the skull
B) Pertaining to the skull
C) Pertaining to the brain
D) Incision of the chest
E) Pertaining to the head

14. A histologist studies: ............................................
A) Drugs
B) X-rays
C) Tissues
D) The backbone
E) The spinal cord

15. An epithelial cell is a(an): .....................................
A) Skin cell
B) Nerve cell
C) Fat cell
D) Organ
E) Muscle cell

16. The pleural cavity is the: ......................................
A) Space within the abdomen
B) Space within the backbone
C) Space surrounding the hip
D) Space between the membranes around the lungs
E) Space within the skull

17. Viscera: ..............................................................
A) Cells in the blood
B) Internal organs
C) Parts of cells
D) Cavities of the body
E) Tissues composed of cartilage

18. The pituitary gland is in which body cavity? ..................
A) Cranial

19. Structure in the trachea: ...........................................
A) Bronchial tube
B) Pharynx
C) Esophagus
D) Larynx
E) Tongue

20. The tailbone is the: .................................................
A) Sacrum
B) Cervix
C) Ilium
D) Coccyx
E) Cranium

21. Supine means: ......................................................
A) Lying on the back
B) Conducting toward a structure
C) In front of the body
D) Lying on the belly
E) Pertaining to the side

22. The upper lateral regions of the abdomen, beneath the ribs, are the: ....................................................
A) Hypogastric region
B) Inguinal regions
C) Lumbar regions
D) Umbilical regions
E) Hypochondraic regions

23. The RUQ contains the: .......................................... 
A) Liver
B) Appendix
C) Lung
D) Spleen
E) Heart

24. Pertaining to a plane that divides the body into right and left portions: ....................................................
A) Coronal
B) Transverse
C) Frontal
D) Sagittal
25. A disc is: .......................................................... O

A) Part of the hip bone
B) A piece of cartilage between backbones
C) A piece of bony tissue connecting the joints in the back
D) An abnormal structure in the back
E) A pad of fatty tissue between backbones
**Answer Key:**
*Chapter Two*

<table>
<thead>
<tr>
<th>Multiple Choice Quiz</th>
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<tr>
<td>1) D</td>
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</tbody>
</table>

Enter score on face sheet pages 93-95
1. Amniocentesis: ___________________________  O
   A) Incision of the abdomen
   B) Paracentesis
   C) Surgical puncture to remove fluid from the abdomen
   D) Puncture of the chest region
   E) Surgical puncture to remove fluid from the sac around the embryo

2. Inflammation of lymph tissue in the throat: ............  O
   A) Bronchitis
   B) Laryngitis
   C) Pharyngeal
   D) Tonsilitis
   E) Tonsillitis

3. Prolapse: ...........................................  O
   A) –pathy
   B) –ptosis
   C) –troph
   D) –plasty
   E) –plasm

4. Blood is held back from an area: ...........................  O
   A) Thrombocyte
   B) Anemia
   C) Ischemia
   D) Hematoma
   E) Hemolysis

5. Death: ...............................................  O
   A) Neur/o
   B) Neph/o
   C) Neut/o
   D) Nucle/o
   E) Nerc/o

6. Acromegaly: ...........................................  O
   A) Exocrine disorder of bone enlargement
   B) Enlargement of extremities after puberty due to pituitary gland problem
   C) Abnormal growth of bones before puberty
   D) Endocrine gland problem in young children
   E) Fear of extremities (heights)

7. Pain in the ear: .....................................  O
   A) Pleurodynia
   B) Otitis
   C) Otalgia
   D) Osteitis
   E) Neuralgia

8. Continuing over a long period of time: ....................  O
   A) Chronic
   B) Acute
   C) Chromic
   D) Relapse
   E) Remission

9. Small artery is a (an): ..................................  O
   A) Capillary
   B) Arteriole
   C) Venule
   D) Lymph vessel
   E) Blood vessel leading from the heart

10. Instrument to visually examine: ..........................  O
    A) –scope
    B) –scopy
    C) –opsy
    D) –stasis
    E) –tomy

11. Hernia of the urinary bladder: ............................  O
    A) Rectocele
    B) Inguinal hernia
    C) Hiatal hernia
    D) Rectalgia
    E) Cystocele

12. Tumor of bone marrow: ..................................  O
    A) Myosarcoma
    B) Malignant myeloma
    C) Osteogenic sarcoma
    D) Adenocarcinoma
    E) Metastasis
13. X-ray record of the spinal cord: .........................
   A) Electroencephalogram
   B) Bone scan
   C) Myogram
   D) Myelogram
   E) Electromyogram

14. Berry-shaped bacteria: .................................
   A) Staphyl/o
   B) Pneum/o
   C) –cele
   D) Strept/o
   E) –coci

15. Neutrophil: .............................................
   A) Lymphocyte
   B) Polymorphonuclear leukocyte
   C) Monocyte
   D) Agranulocyte
   E) Platelet

16. Instrument to record: ................................
   A) –gram
   B) –scopy
   C) –scope
   D) –graph
   E) –graphy

17. Resembling: ...........................................
   A) –osis
   B) –eal
   C) lith/o
   D) –oid
   E) –ic

18. An eosinophil is a (an): .............................
   A) Erythrocyte
   B) Leukocyte
   C) Agranulocyte
   D) Platelet
   E) Lymphocyte

19. Removal of the voice box: ..........................
   A) Laryngectomy
   B) Pharyngotomy
   C) Pharynostomy
   D) Laryngectomy
   E) Trachectomy

20. Angioplasty means: ..................................
   A) Pertaining to fat
   B) Fear of extremities
   C) Therapy with chemicals
   D) Surgical Puncture of a blood vessel
   E) Surgical repair of blood vessel

21. A blood cell that produces antibodies: ...........
   A) Erythrocyte
   B) Platelet
   C) Lymphocyte
   D) Monocyte
   E) Basophil

22. Opposite of –malacia is: ............................
   A) –megaly
   B) –sclerosis
   C) –emia
   D) –plasia
   E) –lysis

23. Excessive development: ............................
   A) Hypoplasia
   B) Dystrophy
   C) Achondroplasia
   D) Morphology
   E) Hypertrophy

24. Treatment: ...........................................
   A) –therapy
   B) –tomy
   C) –ectomy
   D) –osis
   E) –stasis

25. Surgical creation of a permanent opening to the outside of the body: ..............................
   A) –stomy
   B) –tomy
   C) –ectomy
D) Section
E) Resection
Answer Key:  
Chapter Two

Multiple Choice Quiz

1) E  
2) E  
3) B  
4) C  
5) E  
6) B  
7) C  
8) A  
9) B  
10) A  
11) E  
12) B  
13) D  
14) E  
15) B  
16) D  
17) D  
18) B  
19) D  
20) E  
21) C  
22) B  
23) E  
24) A  
25) A

Enter score on face sheet pages 93-95
# Chapter Four

## MULTIPLE CHOICE QUIZ

In the box write the letter of the choice that is the definition of the term or best answers the question. There is only one correct answer for each question.

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<td>A) Intracostal, B) Infracostal, C) Mediastinal, D) Intercostal</td>
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<td>2. Pertaining to the opposite side:</td>
<td>A) Bilateral, B) Contralateral, C) Unilateral, D) Contraindication, E) Ipsilateral</td>
</tr>
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<td>4. A congenital anomaly:</td>
<td>A) Cerebral ischemia, B) Pseudocyesis, C) Hemiglossectomy, D) Syndactyly, E) Acromegaly</td>
</tr>
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<td>5. Symbiosis:</td>
<td>A) Parasitism, B) Symmetrical organs, C) Biopsy, D) Group of symptoms, E) Neonatal</td>
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<td>8. Antibodies:</td>
<td>A) Bacteria, B) Protein substances made by leukocytes, C) Phagocytes, D) Produced by erythrocytes to fight disease, E) Antibodies</td>
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<td>9. Symphysis:</td>
<td>A) Bifurcation, B) Symptoms occur tighter, C) Living organisms grow together for mutual benefit, D) Bones grow together, as in the pelvis, E) Synthesis of substances</td>
</tr>
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<td>10. Ultrasonography:</td>
<td>A) X-ray recording of sound waves, B) Amniocentesis, C) Sound waves and echoes are used to create an image, D) Radioactive material is injected and sound waves are recorded, E) Abdominal x-ray recording</td>
</tr>
<tr>
<td>12. Hypertrophy:</td>
<td>A) Underdeveloped, B) Poor development, C) Increase in cell size</td>
</tr>
</tbody>
</table>
D) Increase in cell numbers
E) Newborn

13. Excessive sugar in the blood: ..........................................  O
   A) Hypodermic
   B) Hypoglycemia
   C) Glycosuria
   D) Hematuria
   E) Hyperglycemia

14. Retroperitoneal: .............................................................  O
   A) Region of the stomach
   B) Within the chest
   C) Behind the abdomen
   D) Within the abdomen
   E) Below the pelvis

15. Antigens: .................................................................  O
   A) Streptococci
   B) Antibiotics
   C) Antitoxins
   D) Produced by antibodies
   E) Penicillins

16. Return of disease symptoms: ...........................................  O
   A) Prolapse
   B) Relapse
   C) Syndrome
   D) Prodrome
   E) Remission

17. Dia-: ...........................................................................  O
   A) Flow
   B) Down, lack of
   C) Complete, through
   D) Against
   E) Near

18. Abductor muscle: .........................................................  O
   A) Bending forward
   B) Located proximally
   C) Pertains to both sides
   D) Carries a limb toward the body
   E) Carries a limb away from the body

19. Dyspnea: .................................................................  O
   A) Abnormal formation
   B) Difficult breathing
   C) Not able to sleep
   D) Condition of lack of water
   E) Not able to breathe

20. Brady-: ...........................................................................  O
   A) Fast
   B) Bad
   C) Short
   D) Slow
   E) Large

21. Located on the dorsal side of an endocrine gland in the neck: .........................................................  O
   A) Pituitary gland
   B) Parathyroid glands
   C) Adrenal glands
   D) Esophagus
   E) Trachea

22. Recombinant DNA: .........................................................  O
   A) Pregnancy that is out of place
   B) Artificial kidney machine
   C) Backward development
   D) Antibodies are made against normal tissue
   E) Gene from one organism is inserted into another organism

23. Tachycardia: .................................................................  O
   A) Bad, painful swallowing
   B) Inability to swallow
   C) Near the windpipe
   D) Rapid breathing
   E) Rapid heartbeat

24. Epithelium: .......................................................................  O
   A) Surface cells that line internal organs and are found in the skin
   B) Membrane surrounding bone
   C) Connective tissue that binds muscles to bones
   D) Adipose tissue
   E) Above the stomach

25. Percutaneous: .................................................................  O
   A) Within a vein
B) Through a vein
C) Through the skin
D) Surrounding cartilage
E) Surrounding a bone
Multiple Choice Quiz

1) E
2) B
3) E
4) D
5) A
6) D
7) E
8) B
9) D
10) C
11) D
12) C
13) E
14) C
15) A
16) B
17) C
18) E
19) B
20) D
21) B
22) E
23) E
24) A
25) C

Enter score on face sheet pages 93-95
Chapter Twenty-One
MULTIPLE CHOICE QUIZ

In the box write the letter of the choice that is the definition of the term or best answers to the question. There is only one correct answer for each question.

1. Study of the interaction of drugs and subcellular entities such as enzymes and DNA is called: .................
   A) Medicinal chemistry  
   B) Pharmacodynamics  
   C) Chemotherapy  
   D) Molecular pharmacology  
   E) Pharmacokinetics

2. Finding proper antidotes to the harmful effects of drugs is part of the specialty of; .................................
   A) Molecular pharmacology  
   B) Toxicology  
   C) Medicinal chemistry  
   D) Pharmacodynamics  
   E) Pharmacokinetics

3. Which of the following is a drug generic name? .................
   A) Omnipen  
   B) Ampicillin  
   C) Aminopenicillanic acid  
   D) Polycillin  
   E) Principen

4. Which agency holds the legal responsibility for deciding whether a drug may be distributed and sold? .................
   A) PDR  
   B) United States Pharmacopeia  
   C) National Institutes of Health  
   D) Hospital Formulary  
   E) FDA

5. The combination of two drugs can cause an effect that is greater than the sum of the individual effects of each: .................
   A) Iatrogenic  
   B) Additive action  
   C) Tolerance  
   D) Synergism  
   E) Idiosyncrasy

6. Suppositories are inserted: ................................
   A) Parenteral administration

7. Drugs are swallowed and absorbed through the intestinal tract: ................................
   A) Parenteral administration  
   B) Rectal administration  
   C) Inhalation  
   D) Topical  
   E) Oral

8. Drugs are injected through a syringe into a muscle, vein, or body cavity: ................................
   A) Parenteral administration  
   B) Rectal administration  
   C) Inhalation  
   D) Topical  
   E) Oral

9. Aerosols are administered in this way: ................................
   A) Parenteral administration  
   B) Rectal administration  
   C) Inhalation  
   D) Topical  
   E) Oral

10. Drugs are applied on the skin: ................................
    A) Parenteral administration  
    B) Rectal administration  
    C) Inhalation  
    D) Topical  
    E) Oral

11. What is anaphylaxis? ................................
    A) A type of hypersensitivity reaction  
    B) Factors in the patient’s condition that make the use of a drug dangerous  
    C) A condition produced by the treatment  
    D) Toxic effects that routinely result from the use of a drug  
    E) An antipruritic and antiseptic drug
12. Drugs that block release of a substance that causes allergic reactions are called: ........................................... O

A) Anticoagulants
B) Antidiabetics
C) Anticonvulsants
D) Antihistamines
E) Anesthetics

13. Morphine: ................................................................. O

A) Endocrine
B) Cardiovascular
C) Analgesic
D) Stimulant
E) Anticoagulant

14. Beta- Blocker: ............................................................ O

A) Endocrine drug
B) Cardiovascular drug
C) Analgesic drug
D) Stimulant drug
E) Anticoagulant drug

15. Heparin: ................................................................. O

A) Endocrine drug
B) Cardiovascular drug
C) Analgesic drug
D) Stimulant drug
E) Anticoagulant drug

16. Estrogen: ................................................................. O

A) Endocrine drug
B) Cardiovascular drug
C) Analgesic drug
D) Stimulant drug
E) Anticoagulant drug

17. Amphetamine and caffeine: ........................................ O

A) Endocrine drug
B) Cardiovascular drug
C) Analgesic drug
D) Stimulant drug
E) Anticoagulant drug

18. What is the effect of a diuretic? ...................................... O

A) Lowers blood pressure by promoting fluid excretion from the kidney.
B) Widens blood vessels
C) Stops blood clotting
D) Lowers cholesterol
E) Increases blood pressure by holding water in the body

19. Penicillin is an example of which type of drug? ................. O

A) Antihistamine
B) Analgesic
C) Antiemetic
D) Antibiotic
E) Hypnotic

20. A drug that works against fever is: .................................. O

A) Antipruritic
B) Antipyretic
C) Anesthetic
D) Anticoagulant
E) Hypnotic

21. Drugs that control anxiety and severe disturbances of behavior: ............................................................... O

A) Sedatives
B) Anticonvulsants
C) Analgesics
D) Tranquilizers
E) Anesthetics

22. Drugs that relax without necessarily producing sleep: ........ O

A) Sedatives
B) Anticonvulsants
C) Analgesics
D) Tranquilizers
E) Anesthetics

23. Drugs used to relieve pain induce sleep, and suppress cough: O

A) Sedatives
B) Anticonvulsants
C) Analgesics
D) Tranquilizers
E) Anesthetics
24. Drugs used to treat epilepsy:
   A) Sedatives  
   B) Anticonvulsants  
   C) Analgesics  
   D) Tranquilizers  
   E) Anesthetics

25. Drugs used to treat epilepsy:
   A) Sedatives  
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Multiple Choice Quiz


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Leukocytosis
Enteropathy
Adenopathy
Endoscope
Endoscopy
Prognosis
Osteotomy
Gastroenterology

Inflammation of bone
Inflammation of bone and joints (actually degeneration of joint tissue).
Study of disease
One who studies diseases, performs autopsies, and examines biopsy samples
Pertaining to treatment of children
Study of the mind
Specialist in the treatment of the mind
Study of x-rays
Pertaining to the kidney. Ren/o (Latin) is used with –al (Latin), and nephr/o (Greek) is used with –ic (Greek).
Inflammation of the nose
Tumor flesh tissue (cancerous tumor of connective tissues, such as bone, muscle, cartilage, fat). Sarcasm is an utterance intended to “cut into the flesh” and a sarcophagus is a box or container (Egyptian coffin) intended to “swallow flesh” Phag/o means to eat of swallow.
Process of cutting out; removal
A clotting cell
Study of the urinary tract
Pertaining to the heart
Pertaining to nerves
Pain of a joint
Red blood cell
Removal (resection) of a kidney
Blood condition of white cells; malignant (cancerous) condition
Pertaining to producing cancer. From the Greek “gennao” meaning. “I produce.” Other words to help remember –genic are gene and Genesis.
Pertaining to producing disease
Pertaining to producing by treatment (physician).
Record of the electricity in the brain.
Pertaining to the stomach
Pertaining to the study of nerves
Process of cutting out; removal
Specialist in the study of females and female disorders
Inflammation of the urinary bladder
Study of the endocrine glands
Tumor (malignant) of the liver
Process of viewing life; removal of living tissue for microscopic examination.
Abnormal condition of the kidney
Abnormal condition (slight increase) of normal white blood cells.
Disease of the intestines
Disease of glands
Instrument to visually examine within (the body).
Process of visually examining within (the body).
State of before knowledge; prediction about the outcome of treatment
Incision of a bone
Process of study of the stomach and intestines
Anemia: A decrease in erythrocytes or hemoglobin.
Autopsy: “self view”—examination of a dead body, understand its function.
Diagnosis: state of complete knowledge; information gathered about a patient’s illness.
Endocrinologist: One who specializes in endocrine glands.
Epigastric: Pertaining to above the stomach.
Epidermis: Outer layer of skin; above the dermis layer.
Excision: Process of cutting out to resection.
Exocrine glands: Glands that secrete chemicals to the outside of the body.
Hyperglycemia: Condition of increased blood sugar.
Hypogastric: Pertaining to below the stomach.
Incision: Process of cutting into; section.
Pericardium: Structure (membrane) surrounding the heart.
Prognosis: State of before knowledge - prediction about the outcome of a condition.
Resection: Removal; excision. From the Latin “resecar” meaning “to cut back, trim or curtail.” Thus resection is an operation wherein an organ is “cut back” or removed.
Retrocardiac: Pertaining to behind the heart.
Subhepatic: Pertaining to below the liver.
Transhepatic: Pertaining to across or through the liver.
## Chapter Two
### Answers to Combining Forms and Terminology Sections

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal</td>
<td>Pertaining to the abdomen.</td>
</tr>
<tr>
<td>Adipose</td>
<td>Pertaining to fat.</td>
</tr>
<tr>
<td>Anterior</td>
<td>Pertaining to the front</td>
</tr>
<tr>
<td>Anabolism</td>
<td>Process of casting up (Building-up or synthesizing process in a cell)</td>
</tr>
<tr>
<td>Cervical</td>
<td>Pertaining to the neck</td>
</tr>
<tr>
<td>Chondroma</td>
<td>Tumor of cartilage</td>
</tr>
<tr>
<td>Chondrosarcoma</td>
<td>Flesh tumor (malignant) of cartilage</td>
</tr>
<tr>
<td>Chromosomes</td>
<td>“Color bodies”; contain genetic material and are located in the nucleus of cell.</td>
</tr>
<tr>
<td>Coccygeal</td>
<td>Pertaining to the tailbone</td>
</tr>
<tr>
<td>Cranietomy</td>
<td>Incision of the skull</td>
</tr>
<tr>
<td>Cytoplasm</td>
<td>Contents (formation) of the cell (apart from the nucleus and cell membrane.)</td>
</tr>
<tr>
<td>Distal</td>
<td>Pertaining to far (from the beginning of a structure)</td>
</tr>
<tr>
<td>Dorsal</td>
<td>Pertaining to the back</td>
</tr>
<tr>
<td>Histology</td>
<td>Study of tissues</td>
</tr>
<tr>
<td>Iliac</td>
<td>Pertaining to the ilium</td>
</tr>
<tr>
<td>Inguinal</td>
<td>Pertaining to the groin</td>
</tr>
<tr>
<td>Karyotype</td>
<td>Picture (classification) of the nucleus (and its chromosomes)</td>
</tr>
<tr>
<td>Lateral</td>
<td>Pertaining to the side</td>
</tr>
<tr>
<td>Lumbosacral</td>
<td>Pertaining to the lumbar and sacral regions</td>
</tr>
<tr>
<td>Medical</td>
<td>Pertaining to the middle</td>
</tr>
<tr>
<td>Nucleic</td>
<td>Pertaining to the nucleus</td>
</tr>
<tr>
<td>Pelvic</td>
<td>Pertaining to the hip bone</td>
</tr>
<tr>
<td>Posterior</td>
<td>Pertaining to the back, behind</td>
</tr>
<tr>
<td>Proximal</td>
<td>Pertaining to near the beginning of a structure</td>
</tr>
<tr>
<td>Sacral</td>
<td>Pertaining to the sacrum (lower back)</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>Tumor of flesh tissue (malignant)</td>
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<td>Spinal</td>
<td>Pertaining to the spine, backbone</td>
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<td>Epithelial cell</td>
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<td>Pertaining to the navel</td>
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<td>Pertaining to the belly side of the body</td>
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<td>Pertaining to casting up; building up substances (proteins) in the cell</td>
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<tr>
<td>Epigastric</td>
<td>Pertaining to above the stomach</td>
</tr>
<tr>
<td>Hypochondriac regions</td>
<td>Pertaining to under the rib cartilage (area of the abdomen)</td>
</tr>
<tr>
<td>Intervertebral</td>
<td>Pertaining to between the vertebrae</td>
</tr>
<tr>
<td>Metabolism</td>
<td>State of building up (anabolism) and breaking down (catabolism); processes in a cell.</td>
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## Terminology

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<td>Pain in a joint</td>
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<tr>
<td>Otalgia</td>
<td>Pain in the ear</td>
</tr>
<tr>
<td>Neuralgia</td>
<td>Pain of nerves</td>
</tr>
<tr>
<td>Myalgia</td>
<td>Pain of muscles</td>
</tr>
<tr>
<td>Rectocele</td>
<td>Hernia of the rectum</td>
</tr>
<tr>
<td>Cystocele</td>
<td>Hernia of the urinary bladder</td>
</tr>
<tr>
<td>Throacocentesis</td>
<td>Surgical puncture to remove fluid from the chest (thoracentesis).</td>
</tr>
<tr>
<td>Amniocentesis</td>
<td>Surgical puncture of the amnion</td>
</tr>
<tr>
<td>Abdominocentesis</td>
<td>Surgical puncture of the abdomen</td>
</tr>
<tr>
<td>Streptococcus</td>
<td>Berry-shaped bacterium found in twisted chains.</td>
</tr>
<tr>
<td>Staphylococci</td>
<td>Berry-shaped bacteria in clusters</td>
</tr>
<tr>
<td>Erythrocyte</td>
<td>Red blood cell</td>
</tr>
<tr>
<td>Leukocyte</td>
<td>White blood cell</td>
</tr>
<tr>
<td>Thrombocyte</td>
<td>Clotting cell</td>
</tr>
<tr>
<td>Pleurodynia</td>
<td>Pain in the chest wall muscles that is aggravated by breathing (Literally: pain of the pleura).</td>
</tr>
<tr>
<td>Laryngectomy</td>
<td>Removal of the larynx</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>Removal of a breast</td>
</tr>
<tr>
<td>Anemia</td>
<td>Decrease in erythrocytes or hemoglobin</td>
</tr>
<tr>
<td>Ischemia</td>
<td>To hold back blood from an area of the body</td>
</tr>
<tr>
<td>Carcinogenesis</td>
<td>Condition of producing cancer</td>
</tr>
<tr>
<td>Pathogenesis</td>
<td>Condition of producing disease</td>
</tr>
<tr>
<td>Angiogenesis</td>
<td>Formation of blood vessels</td>
</tr>
<tr>
<td>Carcinogenic</td>
<td>Pertaining to producing cancer</td>
</tr>
<tr>
<td>Osteogenic</td>
<td>Pertaining to produced within bone</td>
</tr>
<tr>
<td>Electroencephalogram</td>
<td>Record of the electricity in the brain</td>
</tr>
<tr>
<td>Myelogram</td>
<td>Record (x-ray) of the spinal cord</td>
</tr>
<tr>
<td>Mammogram</td>
<td>Record (x-ray) of the breast</td>
</tr>
<tr>
<td>Electroencephalograph</td>
<td>Instrument for recording the electricity in the brain</td>
</tr>
<tr>
<td>Electroencephalography</td>
<td>Process of recording the electricity in the brain</td>
</tr>
<tr>
<td>Angiography</td>
<td>Process of recording (x-ray) blood vessels</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>Inflammation of the bronchi</td>
</tr>
<tr>
<td>Tonsillitis</td>
<td>Inflammation of the tonsils</td>
</tr>
<tr>
<td>Phlebitis</td>
<td>Inflammation of veins</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>Study of the eye</td>
</tr>
<tr>
<td>Morphology</td>
<td>Study of shape or form</td>
</tr>
<tr>
<td>Hemolysis</td>
<td>Destruction of blood (breakdown of red blood cells with release of hemoglobin).</td>
</tr>
<tr>
<td>Osteomalacia</td>
<td>Softening of bone</td>
</tr>
<tr>
<td>Chondromalacia</td>
<td>Softening of cartilage</td>
</tr>
<tr>
<td>Acromegaly</td>
<td>Enlargement of extremities</td>
</tr>
<tr>
<td>Splenomegaly</td>
<td>Enlargement of the spleen</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Myoma</td>
<td>Tumor (benign) of muscle</td>
</tr>
<tr>
<td>Myosarcoma</td>
<td>Tumor (malignant) of muscle (a type of flesh tissue).</td>
</tr>
<tr>
<td>Multiple myeloma</td>
<td>Tumor of bone marrow.</td>
</tr>
<tr>
<td>Hematoma</td>
<td>Collection of blood (bruise).</td>
</tr>
<tr>
<td>Biopsy</td>
<td>To view life; microscopic examination of living tissue.</td>
</tr>
<tr>
<td>Necropsy</td>
<td>Visual examination of dead bodies; autopsy (most often used for animals).</td>
</tr>
<tr>
<td>Necrosis</td>
<td>Condition of death (of cells).</td>
</tr>
<tr>
<td>Hydronephrosis</td>
<td>Abnormal condition of water (found) in the kidney</td>
</tr>
<tr>
<td>Leukocytosis</td>
<td>Abnormal condition (slight increase in numbers) of normal white blood cells.</td>
</tr>
<tr>
<td>Cardiomyopathy</td>
<td>Disease of heart muscle</td>
</tr>
<tr>
<td>Erythronopenia</td>
<td>Deficiency of red blood cells</td>
</tr>
<tr>
<td>Leukopenia</td>
<td>Deficiency of white blood cells</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>Deficiency of clotting cells</td>
</tr>
<tr>
<td>Acrophobia</td>
<td>Fear of heights</td>
</tr>
<tr>
<td>Angioplasty</td>
<td>Surgical repair of blood vessels</td>
</tr>
<tr>
<td>Achondroplasia</td>
<td>No (improper) development of cartilage</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>Fear of being in open, crowded spaces (marketplace).</td>
</tr>
<tr>
<td>Blepharoptosis</td>
<td>Prolapse, sagging of an eyelid</td>
</tr>
<tr>
<td>Arteriosclerosis</td>
<td>Hardening of arteries</td>
</tr>
<tr>
<td>Laparoscope</td>
<td>Instrument to visually examine the abdomen</td>
</tr>
<tr>
<td>Laparoscopy</td>
<td>Process of visual examination of the abdomen</td>
</tr>
<tr>
<td>Metastasis</td>
<td>Beyond control; spreading of a cancerous tumor</td>
</tr>
<tr>
<td>Hemostasis</td>
<td>Stopping the flow of blood (naturally by clotting or artificially by compression).</td>
</tr>
<tr>
<td>Colostomy</td>
<td>New opening of the colon (to the outside of the body).</td>
</tr>
<tr>
<td>Tracheostomy</td>
<td>New opening of the windpipe (to the outside of the body).</td>
</tr>
<tr>
<td>Hydrotherapy</td>
<td>Treatment with water</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Treatment with drugs</td>
</tr>
<tr>
<td>Radiotherapy</td>
<td>Treatment with x-rays</td>
</tr>
<tr>
<td>Laparotomy</td>
<td>Incision into the abdomen</td>
</tr>
<tr>
<td>Phlebotomy</td>
<td>Incision of a vein</td>
</tr>
<tr>
<td>Hypertrophy</td>
<td>Excessive development</td>
</tr>
<tr>
<td>Atrophy</td>
<td>No development; wasting away of tissue</td>
</tr>
<tr>
<td>Radiographer</td>
<td>One who records x-ray</td>
</tr>
<tr>
<td>Leukemia</td>
<td>Condition of increase in white cells (malignancy).</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>Condition (abnormal) of lungs</td>
</tr>
<tr>
<td>Nephrologist</td>
<td>Specialist in the study of the kidney</td>
</tr>
<tr>
<td>Arteriole</td>
<td>Small artery</td>
</tr>
<tr>
<td>Venule</td>
<td>Small vein</td>
</tr>
<tr>
<td>Pericardium</td>
<td>Structure surrounding the heart</td>
</tr>
<tr>
<td>Nephropathy</td>
<td>Disease of the kidney</td>
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<tr>
<td>Cardiac</td>
<td>Pertaining to the heart</td>
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<td>Pertaining to the peritoneum</td>
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<td>Pulmonary</td>
<td>Pertaining to the lungs</td>
</tr>
<tr>
<td>Axillary</td>
<td>Pertaining to the armpit</td>
</tr>
<tr>
<td>Laryngeal</td>
<td>Pertaining to the voice box</td>
</tr>
<tr>
<td>Chronic</td>
<td>Long-term; over a long period of time</td>
</tr>
<tr>
<td>Acute</td>
<td>Sharp, sudden, severe</td>
</tr>
<tr>
<td>Pathological</td>
<td>Pertaining to the study of disease</td>
</tr>
<tr>
<td>Adenoids</td>
<td>Resembling glands (lymphatic tissue in the throat, near the nose)</td>
</tr>
<tr>
<td>Adipose</td>
<td>Pertaining to fat</td>
</tr>
<tr>
<td>Mucous</td>
<td>Pertaining to mucus</td>
</tr>
<tr>
<td>Mucus</td>
<td>The substance secreted from mucous membranes</td>
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<tr>
<td>Necrotic</td>
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<td>Not breathing.</td>
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<td>Anoxia</td>
<td>Without oxygen (decrease in tissues).</td>
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<tr>
<td>Abnormal</td>
<td>Pertaining to away from the norm (rule); not regular</td>
</tr>
<tr>
<td>Abductor</td>
<td>One who (muscle which) leads away from the body. To <em>abduct</em> means to carry away by force; kidnap</td>
</tr>
<tr>
<td>Adductor</td>
<td>One who (muscle which) leads toward the body. To <em>admit</em> means to send toward or permit entrance.</td>
</tr>
<tr>
<td>Adrenal glands</td>
<td>Endocrine glands located above (toward) the kidneys.</td>
</tr>
<tr>
<td>Anabolism</td>
<td>Process of casting (building) up materials (proteins) within cells.</td>
</tr>
<tr>
<td>Analysis</td>
<td>To separate (apart). Psychanalysis is a psychiatric treatment that explores the mind. Urinalysis (urin/o + (an)alysis) is laboratory examination of urine to aid in diagnosis.</td>
</tr>
<tr>
<td>Antecibus</td>
<td>Before meals</td>
</tr>
<tr>
<td>Anteflexion</td>
<td>Bending forward</td>
</tr>
<tr>
<td>Ante partum</td>
<td>Before birth</td>
</tr>
<tr>
<td>Antisepsis</td>
<td>Condition against infection</td>
</tr>
<tr>
<td>Antibiotic</td>
<td>Pertaining to against life (germ life).</td>
</tr>
<tr>
<td>Antigen</td>
<td>A substance (usually foreign) that stimulates the production of antibodies</td>
</tr>
<tr>
<td>Antibody</td>
<td>Protein substance made in the body to destroy foreign antigens.</td>
</tr>
<tr>
<td>Antitoxin</td>
<td>A substance (antibody) produced in response to and capable of neutralizing a toxin (such as those causing diphtheria or tetanus). Antirenin contains antitoxin specific for an animal or insect venom</td>
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<tr>
<td>Autoimmune</td>
<td>Related to making antibodies (immune substances) against one’s own cells and tissues.</td>
</tr>
<tr>
<td>Bifurcation</td>
<td>Forking (branching) into two; as the trachea bifurcates into two individual tubes.</td>
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<td>Bilateral</td>
<td>Pertaining to two sides</td>
</tr>
<tr>
<td>Bradycardia</td>
<td>Condition of slow heart beat</td>
</tr>
<tr>
<td>Catabolism</td>
<td>Process of casting down materials (sugar) to release energy in cells.</td>
</tr>
<tr>
<td>Congenital anomaly</td>
<td>Irregularity at birth</td>
</tr>
<tr>
<td>Connective</td>
<td>To tie (bind) together. A conference (fer- means to carry or bring) is where people gather together or meet.</td>
</tr>
<tr>
<td>Contraindication</td>
<td>To point out against; as reasons why a drug should not be taken</td>
</tr>
<tr>
<td>Contralateral</td>
<td>Pertaining to the opposite side.</td>
</tr>
<tr>
<td>Dehydration</td>
<td>Condition of lack of water</td>
</tr>
<tr>
<td>Diameter</td>
<td>To measure through; as the diameter of a circle</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>To flow through; water is not properly absorbed through the walls of the colon</td>
</tr>
<tr>
<td>Dialysis</td>
<td>Complete separation; twp types are hemodialysis and peritoneal dialysis</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>Difficult breathing</td>
</tr>
<tr>
<td>Dysplasia</td>
<td>Abnormal (“bad”) development of formation</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
<td>Pregnancy out of the normal place (usually in the fallopian tubes).</td>
</tr>
<tr>
<td>Endotracheal</td>
<td>Pertaining to within the trachea</td>
</tr>
</tbody>
</table>
Endoscope | Instrument to view within the body; gastroscope, bronchoscope, laparoscope.
Endocardium | Inner lining (membrane) of the heart.
Epithelium | Skin cell; latterly, “upon a nipple.”
Euthyroid | Normal thyroid function.
Euphoria | Good feeling, “high” A eulogy is a speech saying good things about a person after his/her death.
Exophthalmos | Eyeballs that protrude
Hemiglossectomy | Removal of half the tongue
Hyperplasia | Condition of increased formation (increase in number of cells).
Hyperplasia | Increase in development; increase in size of cells.
Hyperplasia | Increase in blood sugar
Hyperdermic | Pertaining to below the skin
hypoglycemia | Decrease in blood sugar
Insomniac | Pertaining to inability to sleep
Incision | Process of cutting into; sectioning
Infracostal | Pertain to below ribs
Intercostals | Pertain to between the ribs
Intravenous | Pertain to within a vein
Macrocephalic | Pertain to enlarged head
Malignant | Harmful, bad; cancerous condition
Malaise | Feeling of discomfort; “bad feeling”
Metamorphosis | Condition of change of shape or form. A worm-like larva undergoes a change in shape to become a butterfly. This is an example of metamorphosis.
Metastasis | Beyond control; spreading of a cancerous tumor.
Metacarpal bones | Five hand bones (beyond the wrist).
Microscope | Instrument to view small objects
Neoplasm | New growth; new formation (tumor).
Neonatal | Pertain to a newborn (infant).
Pancytopenia | Condition of decrease in all cells (blood cells).
Parathyroid glands | Endocrine glands located near (on the dorsal side of) the thyroid gland.
Paralysis | Abnormal destruction (of nerves) leading to loss of muscle function
Percutaneous | Pertaining to through the skin
Pericardium | Membrane surrounding the heart
Periosteum | Membrane surrounding the bone
Polymorphonuclear | Pertain to a many-shaped nucleus; a type of white blood cell
Polyneuritis | Inflammation of many nerves
Post mortem | After death
Pastnatal | Pertain to after birth
Precancerous | Pertain to before cancer; a lesion that may become cancerous
Prenatal | Pertain to before birth.
Prodrome | Symptoms that appear before the onset of a more server illness
Prolapse | Sliding forward or downward
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudocyesis</td>
<td>State of false pregnancy</td>
</tr>
<tr>
<td>Relapse</td>
<td>A sliding back; recurrence of symptoms of disease</td>
</tr>
<tr>
<td>Remission</td>
<td>To send back; disappearance of symptoms of disease</td>
</tr>
<tr>
<td>Recombinant DNA</td>
<td>Inserting a gene (region of DNA) from one organism into the DNA of another organism</td>
</tr>
<tr>
<td>Retroperitoneal</td>
<td>Pertaining to behind the peritoneum</td>
</tr>
<tr>
<td>Retroflexion</td>
<td>Bending backward</td>
</tr>
<tr>
<td>Subcutaneous</td>
<td>Pertaining to under the skin</td>
</tr>
<tr>
<td>Suprathoracic</td>
<td>Pertaining to above the chest</td>
</tr>
<tr>
<td>Suprarenal glands</td>
<td>Endocrine glands located above each kidney (adrenal glands).</td>
</tr>
<tr>
<td>Syndactyly</td>
<td>Condition of webbed (held together) fingers or toes; a congenital anomaly.</td>
</tr>
<tr>
<td>Synthesis</td>
<td>To put, place together, as in protein synthesis or photosynthesis.</td>
</tr>
<tr>
<td>Syndrome</td>
<td>A group of symptoms that run (occur) together. <em>In synchrony means timed (chron/o) together.</em></td>
</tr>
<tr>
<td>Symbiosis</td>
<td>Condition or state of “life together”; two organisms living together for mutual benefit or not (parasitism).</td>
</tr>
<tr>
<td>Symmetry</td>
<td>State of “measurement together”; equality of parts; mirror images.</td>
</tr>
<tr>
<td>Symphysis</td>
<td>To grow together; bones that grow together at the joint.</td>
</tr>
<tr>
<td>Tachypnea</td>
<td>Rapid breathing</td>
</tr>
<tr>
<td>Transfusion</td>
<td>To pour across, as in transferring blood from one person to another.</td>
</tr>
<tr>
<td>Transurethral</td>
<td>Pertaining to through the urethra</td>
</tr>
<tr>
<td>Ultrasonography</td>
<td>Process of recording ultrasound (beyond the normal range) waves.</td>
</tr>
<tr>
<td>Unilateral</td>
<td>Pertaining to one side.</td>
</tr>
<tr>
<td><strong>Terminology</strong></td>
<td><strong>Meaning</strong></td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aerosol</td>
<td>Particles of drug (in solution) suspended in air.</td>
</tr>
<tr>
<td>Analgesic</td>
<td>Pertaining to without sensitivity to pain.</td>
</tr>
<tr>
<td>Bronchodilator</td>
<td>Drug that relaxes the smooth muscle lining bronchial tubes and is used to treat asthma, emphysema, and chronic bronchitis.</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>Treatment using drugs</td>
</tr>
<tr>
<td>Idiosyncrasy</td>
<td>An unexpected effect of a drug that is peculiar to an individual</td>
</tr>
<tr>
<td>Dubcutaneous</td>
<td>Pertaining to under the skin</td>
</tr>
<tr>
<td>Hypodermic</td>
<td>Pertaining to under the skin</td>
</tr>
<tr>
<td>Synergism</td>
<td>Condition of working together; the drug action in which the combination of two drugs causes an effect that is greater that the sum of the individual effects of each drug alone.</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>Condition of being without nervous sensation</td>
</tr>
<tr>
<td>Antihistamine</td>
<td>An agent that acts against histamine production in the body. Histamine is released as a result of an allergic reaction</td>
</tr>
<tr>
<td>Hypnotic</td>
<td>Pertaining to a condition of sleep (a trance-like state)</td>
</tr>
<tr>
<td>Iatrogenic</td>
<td>Pertaining to and adverse condition that is caused or produced by a physician or a specific treatment</td>
</tr>
<tr>
<td>Sublingual</td>
<td>Pertaining to under the tongue</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>An antibiotic that is produced form a red (erythr/o) mold (myc/o)</td>
</tr>
<tr>
<td>Narcotic</td>
<td>Pertaining to a substance that produces stupor (has morphine or opium-like action)</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>Study of drugs</td>
</tr>
<tr>
<td>Antipruritic</td>
<td>Pertaining to an agent that acts to relieve itching</td>
</tr>
<tr>
<td>Antipyretic</td>
<td>Pertaining to an agent that acts to relieve fever</td>
</tr>
<tr>
<td>Intrathecal</td>
<td>Pertaining to within the sheath of membranes surrounding the spinal cord</td>
</tr>
<tr>
<td>Toxic</td>
<td>Pertaining to poison</td>
</tr>
<tr>
<td>Toxicology</td>
<td>Study of poisons and the harmful effects of drugs</td>
</tr>
<tr>
<td>Vasodilator</td>
<td>Substance that causes blood vessels to widen</td>
</tr>
<tr>
<td>Intracogenous</td>
<td>Pertaining to within a vein</td>
</tr>
<tr>
<td>Vitamin</td>
<td>A substance in foods that is essential in small quantities for growth and good health (life-giving amines).</td>
</tr>
<tr>
<td>Anaphlaxis</td>
<td>A hypersensitive state of the body to a foreign protein (antigen) or drug Can produce severe symptoms and shock</td>
</tr>
<tr>
<td>Antidote</td>
<td>An agent given to counteract unwanted effect of a drug</td>
</tr>
<tr>
<td>Antibiotic</td>
<td>A substance that acts against microorganisms, such as bacteria</td>
</tr>
<tr>
<td>Contraindication</td>
<td>Factor in the patient’s condition that prevents the use of a drug or treatment</td>
</tr>
<tr>
<td>Parenteral</td>
<td>Pertaining to injection of drugs other that through the intestines</td>
</tr>
<tr>
<td>Synergistic</td>
<td>Pertaining to synergism (the drug action in which the sum of the effects of giving two drugs together is greater than that of giving each drug alone).</td>
</tr>
</tbody>
</table>
Directions: Students will

1. Take the Grammar tests.
2. Correct all questions. Only the first section has explanations of answers
3. Fill in information on face sheet, which is in front of all tests.
4. Return work to HESI staff, arrange tutoring or conference to give go-ahead on taking actual HESI test.

Important: Fill in the blanks on the face sheet to assist the HESI staff in assessing your skills and weaknesses.

Your goal is to achieve 80% minimum on any exercise.

➢ To calculate Total number of correct answers, subtract number of incorrect answers from total number of problems

➢ To calculate Percent correct: multiply number correct X 100, divide this number by total number of problems.

Example: 80 correct out of 100: 80 x 100 = 8000 8000 divided by 100 = 80 or 80%

OVERALL GRAMMAR TEST SCORE

Total number of problems: ___303_____
Number correct: _____ Multiply number correct X 100= _______
Divide by total number of problems=_____ %

Tutor will review for areas to work on in vocabulary.

Areas to work on: _______________. _______________. _______________. _______________.

GRAMMAR
FACE SHEET
1. Exercise One: Problems with Verbs (Part 1)

Total Number of Questions  15
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct

2. Exercise Two: Problems with Verbs (Part 2)

Total Number of Questions  15
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct

3. Exercise Three: Problems with Verbs (Part 3)

Total Number of Questions  15
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct

4. Exercise Fourteen: Problems with Introductory Verbal Modifiers

Total Number of Questions  25
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct

5. Exercise Fifteen: Problems with Parallel Structure

Total Number of Questions  25
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct

6. Exercise Eighteen: Problems with Structure

Total Number of Questions  25
Total Number of correct answers X 100= Divide this number by total number of questions

Percent Correct
7. Lesson 5: Sentence Structure

Total Number of Questions _5______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

8. Lesson 6: Sentence Structure--- Parallel structure

Total Number of Questions _6______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

9. PLURALS—Exercises 2, 3, 4, 5

Total Number of Questions _47______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

10. VERBS—Exercises 12, 13

Total Number of Questions _46______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

11. VERBS—(Subject- Verb Agreement) Lesson 12, Exercise 19

Total Number of Questions _29______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

12. Gerunds and Infinitives

Total Number of Questions _50______
Total Number of correct answers_________ X 100=_____ Divide this number by total number of questions

Percent Correct___________

Next step: Make sure to complete overall score on face sheet. See HESI staff for final assessment of our study packet and go-ahead to take test.
**EXERCISE ONE: PROBLEMS WITH VERBS (PART 1)**

**Directions:** Four words of phrases, marked (A), (B), (C), and (D), are given beneath each incomplete sentence. You are to choose the one word or phrase that best completes the sentence. Then, on your answer sheet, find the number of the question and blacken the space that corresponds to the letter of the answer you have chosen so that the letter inside the oval cannot be seen.

**PREVIEW: VERBS**

In some sentences in Part A of the Structure and Written Expression Section, you will be asked to identify the correct verb. In fact, most of the sentences in this part are verb problems.

A verb is a word or phrase that expresses action or condition. A verb can be classified as transitive or intransitive according to whether it requires a complement; it can be classified further according to the kind of complement it requires, including not only nouns, pronouns, adjectives, and adverbs but also –ing forms or infinitives.

1. Al’s doctor insists ___ for a few days.
   (A) that he is resting  
   (B) his resting  
   (C) him to rest  
   (D) that he rest

2. I don’t like iced tea, and ___________.
   (A) she doesn’t too  
   (B) either doesn’t she  
   (C) neither does she  
   (D) she doesn’t neither

3. We wish that you __________ such a lot of work, because we know that you would have enjoyed the party.
   (A) hadn’t had  
   (B) hadn’t  
   (C) didn’t have had  
   (D) hadn’t have

4. Since your roommate is visiting her family this weekend, __________ you like to have dinner with us tonight?
   (A) Will  
   (B) won’t  
   (C) do  
   (D) wouldn’t

5. Please __________ photocopies of documents.
   (A) not to submit  
   (B) do not submit  
   (C) no submit  
   (D) not submit

6. I __________ bacon and eggs every morning.
   (A) am used to eat  
   (B) used to eating  
   (C) am used to eating  
   (D) use to eat

7. The team really looks good tonight because the coach had them __________ every night this week.
   (A) practice  
   (B) to practice  
   (C) practiced  
   (D) the practice

8. Would you mind _______________, please?
   (A) to answer the telephone  
   (B) answering the telephone  
   (C) answer the telephone  
   (D) to the telephone answering
Exercise One: Problems with Verbs (Part 1)

9. You _____ your seats today if you want to go to the game.
   (A) had better to reserve    (C) had better reserve
   (B) had to better reserve    (D) had to reserve better

10. If it _____ so late we could have coffee.
    (A) Wasn’t    (C) weren’t
    (B) Isn’t    (D) not be

11. Your sister used to visit you quite often, ________?
    (A) didn’t she    (C) wouldn’t she
    (B) doesn’t she   (D) hadn’t she

12. If Bob ______ with us, he would have had a good time.
    (A) would come    (C) had come
    (B) would have come (D) came

13. Frankly, I’d rather you ______ anything about it for the time being.
    (A) do    (C) don’t
    (B) didn’t do    (D) didn’t

14. Since they aren’t answering their telephone, they ______.
    (A) must have left    (C) need have left
    (B) should have left (D) can have left

15. We were hurrying because we thought that the bell ________.
    (A) had already rang    (C) had already rung
    (B) had already rang (D) have already ringing
EXERCISE TWO: PROBLEMS WITH VERBS (PART 2)

1. I hadn’t expected James to apologize but I had hoped ______.
   (A) him calling me  (C) him to call me
   (B) that he would call me  (D) that he call me

2. My husband lived at home before we were married, and so ________.
   (A) did I  (C) I had
   (B) had I  (D) I did

3. Does your new secretary __________ shorthand?
   (A) know to take  (C) know how take
   (B) know how to take  (D) know how taking

4. Tommy had his big brother ________ his shoes for him.
   (A) to tie  (C) tied
   (B) tie  (D) tying

5. I wish that the weather ________________ not so warm.
   (A) begin  (C) were
   (B) be  (D) is

6. His English teacher recommends that he __________ a regular degree program.
   (A) begin  (C) will begin
   (B) begins  (D) is beginning

7. Let’s go out for dinner, ________________?
   (A) will we  (C) shall we
   (B) don’t we  (D) are we

8. I’d __________ the operation unless it is absolutely necessary.
   (A) rather not have  (C) rather not to have
   (B) not rather had  (D) rather not having

9. Would you please __________ write on the test books?
   (A) don’t  (C) not
   (B) not to  (D) to not

10. The old man asked her to move because he __________ in that chair.
    (A) used to sit  (C) used to sitting
    (B) was used to sit  (D) was used to sitting

11. After the way she treated you, if I __________ in your place, I wouldn’t return the call.
    (A) be  (C) was
    (B) am  (D) were

12. If I __________ the flu I would have gone with you.
    (A) hadn’t  (C) didn’t have
    (B) hadn’t had  (D) wouldn’t have had

13. he’s taken his medicine, __________?
    (A) hasn’t he  (C) doesn’t he
    (B) didn’t he  (D) isn’t he

14. Your mother and I are looking forward __________ you.
    (A) of seeing  (C) to see
    (B) for seeing  (D) to seeing

15. It is imperative that you __________ there in person.
    (A) be  (C) will
    (B) will be  (D) are
1. The Brakes need___________
   (A) adjusted          (C) to adjust
   (B) to adjustment     (D) adjusting

2. I wish that we ____________ with my brother when he flies to England next week.
   (A) could go          (C) will go
   (B) had gone          (D) are going

3. Are you sure Miss Smith __________ use the new equipment?
   (A) knows to          (C) knows how to
   (B) knows the         (D) knows how

4. Mary and John __________ to the parties at the Student Union every Friday.
   (A) used to go        (C) are used to go
   (B) use to go         (D) were used to go

5. You __________ me, because I didn’t say that.
   (A) must misunderstand (C) must have misunderstood
   (B) must be misunderstanding (D) had to misunderstand

6. __________ you rather sit by the window?
   (A) Don’t            (C) Wouldn’t
   (B) Will             (D) Won’t

7. His government insisted that he __________ until he finished his degree.
   (A) should stay      (C) stayed
   (B) shall stay        (D) stay

8. After he had researched and __________ his paper, he found some additional material that he should have included.
   (A) wrote            (C) writing
   (B) written          (D) have written

9. The man who was driving the truck would not admit that he had been at fault, and ___________.
   (A) neither the other driver          (C) neither had the other driver
   (B) neither would the other driver     (D) the other driver neither

10. If __________ rain, we’ll have the party outside.
    (A) wouldn’t          (C) didn’t
    (B) doesn’t           (D) won’t

11. Excuse me, but it is time to have you temperature ___________.
    (A) taking            (C) take
    (B) to take           (D) taken

12. Almost everyone fails __________ the driver’s test on the first try.
    (A) passing          (C) to pass
    (B) to have passed   (D) in passing

13. Mike had hoped __________ his letter.
    (A) her to answer     (C) that she would answer
    (B) that she answer   (D) her answering

14. I think that you had better __________ earlier so that you can get to class on time.
    (A) to start to get up (C) start getting up
    (B) started getting up (D) to get up

15. Today’s weather isn’t as cold as it was yesterday, ____________?
    (A) wasn’t it          (C) isn’t it
    (B) was it             (D) is it
EXERCISE FOURTEEN:
PROBLEMS WITH INTRODUCTORY VERBAL MODIFIERS

REVIEW INTRODUCTORY VERBAL MODIFIERS

In some sentences in Part B, you will be asked to identify errors in introductory verbal modifiers and the subjects that they modify.

Introductory verbal modifiers are –ing forms, participles, and infinitives. A phrase with an introductory verbal modifier occurs at the beginning of a sentence and is followed by a comma. The subject modified by an introductory verbal modifier must follow the comma.

If the correct subject does not follow the comma, then the meaning of the sentence is changed. Often the changed meaning is not logical.

1. After finishing Roots, the one-hundred-year history of a black American family, the Nobel Prize Committee awarded author Alex Haley a special citation for literary excellence.
   (A) (B) (C) (D)

2. A competitive sport, gymnasts perform before officials who must use their judgment along with their knowledge of the rules to determine the relative skill of each participant.
   (A) (B) (C) (D)

3. To remove stains from permanent press clothing, carefully soaking in cold water before washing with one’s regular detergent.
   (A) (B) (C) (D)

4. Found in Tanzania by Mary Leakey, some archeologists estimated that the three-million-year-old fossils were the oldest human remains to be discovered.
   (A) (B) (C) (D)

5. After fighting the blaze for three days, the supertanker was hauled toward open seas in an effort to save the southern Caribbean form the worst oil spill in history.
   (A) (B) (C) (D)

6. According to the conditions of their scholarships, after finishing their degrees, the University will employ them for three years.
   (A) (B) (C) (D)

7. Originally having been buried in Spain, and later moved to Santo Domingo in the Dominican Republic, Columbus’s final resting place is Havana, Cuba.
   (A) (B) (C) (D)
8. Written by Neil Simon, New York audiences received the new play enthusiastically at the world premiere Saturday evening.

9. By migrating to a warmer climate every fall, survival is assured for another year.

10. Saddened by the actor’s sudden death, a memorial fund will be established so that family and friends can make donations in his name to The American Cancer Society.

11. To prevent cavities, dental floss should be used daily after brushing one’s teeth.

12. While researching the problem of violent crime, the Senate committee’s discovery that handguns were used to commit 54 percent of all murders in large cities.

13. Trying to pay for a purchase with cash, salespersons often ask for credit cards instead.

14. After reviewing the curriculum, several significant changes were made in traditional business programs at Harvard University.

15. Having hit more home runs than any other player in the history of baseball, Hank Aaron’s record is famous.

16. Banned in the U.S., the effect of fluorocarbons continues at a level that could eventually damage the ozone layer, and bring about such serious results as high risk of skin cancer and global climate changes.

17. To avoid jet lag, many doctors recommend that their patients begin adjusting one week before departure time by shifting one hour each day toward the new time schedule.

18. After cooking in the microwave oven for five minutes, one should put most meat dishes on a platter to cool.
19. Traditionally named for women, but recently Bob was chosen as the first make name for a hurricane.

20. While testifying, their answers were recorded by the court stenographer.

21. By reading the instructions carefully, mistakes on the examination can be avoided.

22. Having been divorced, her credit could not be established in spite of her high income.

23. Attempting to smuggle drugs into the country, custom officials apprehended them, and took them to police headquarters for questioning.

24. While trying to build a tunnel through the Blue Ridge Mountains, coal was discovered at the construction site.

25. Founded in 1919, students and teachers who are interested in spending several months abroad may benefit from educational programs administered by the Institute for International Education.
EXERCISE FIFTEEN: PROBLEMS WITH PARALLEL STRUCTURE

PREVIEW: PARALLEL STRUCTURE

In some sentences in Part B, you will be asked to identify errors in parallel structure. Parallel structure is the use of the same grammatical structures for related ideas of equal importance. Related ideas of equal importance often occur in the form of a list. Sometimes related ideas of equal importance are connected by conjunctions, such as and, but, and or.

1. The committee decided to cancel its lawsuit, to approve the contract, and that it would adjourn the meeting.
   (A) (B) (C) (D)

2. Air travel is fast, safe, and it is convenient.
   (A) (B) (C) (D)

3. Rock music is not only popular in the United States but also abroad.
   (A) (B) (C) (D)

4. Every day the watchman would lock the doors, turning on the spotlights, and walk around the building.
   (A) (B) (C) (D)

5. To control quality and making decisions about production are among the many responsibilities of an industrial engineer.
   (A) (B) (C) (D)

6. I suggest that the instructor react to the situation by changing the textbook instead of to modify the objectives of the course.
   (A) (B) (C) (D)

7. Dr. Johnson, the first woman elected president of the University, was intelligent, capable, and awareness of the problems to be solved.
   (A) (B) (C) (D)

8. The insurance program used to include not only employees but their families.
   (A) (B) (C) (D)

9. The six main parts of a business letter are the address, the inside address, the salutation, the body, the closing, and signing your name.
   (A) (B) (C) (D)

10. We solved the problem by using a computer rather than to do it all by hand.
    (A) (B) (C) (D)
11. To read literature and being introduced to a different culture are two excellent reasons for studying a foreign language.  
(A) (B) (C) (D)

12. The proposed increase in the utility rate was neither a fair request and not a practical one.  
(A) (B) (C) (D)

13. Tom is the best candidate for the position because he understands the project, knows the University, and who works very hard.  
(A) (B) (C) (D)

14. Ice skating and to go skiing are popular winter sports in the Northern United States.  
(A) (B) (C) (D)

15. The surgeon examined the patient quickly, and then the operation was begun.  
(A) (B) (C) (D)

16. Because we were not sure where the house was, and because of the time, we decided to ask for directions.  
(A) (B) (C) (D)

17. To treat minor diarrhea, drink plenty of liquids, especially tea, water, and carbonated beverages, eat soup, yogurt, salty crackers, and bananas, and avoiding milk, butter, eggs, and meat for twenty-four hours.  
(A) (B) (C) (D)

18. The new electric typewriters are equipped not only with an element for foreign languages but also a key for correcting errors automatically.  
(A) (B) (C) (D)

19. The examiner did not know whether to report the student for cheating or warning him first.  
(A) (B) (C) (D)

20. Jim had spent his vacation traveling in Arizona visiting some of the Indian reservations, and had finished several paintings that he had begun last year.  
(A) (B) (C) (D)

21. The Smithsonian Institute is famous because is contains such interesting exhibits as the flag that was raised over Fort McHenry in 1812, the airplane that the Wright brothers built for their first flight at Kitty hawk and there are the gowns worn by every first lady since Martha Washington.  
(A) (B) (C) (D)
11. To read literature and **being introduced** to a different culture are two excellent reasons for studying a foreign language.

12. The **proposed** increase in the utility rate was neither a fair request and not a practical one.

13. Tom is the **best candidate** for the position because he understands the project, knows the University, and **who works very hard**.

14. Ice skating and to go skiing are popular **winter sports** in the Northern United States.

15. The surgeon examined the patient **quickly**, and then the operation was begun.

16. Because we were not sure where **the house was**, and because of the time, we decided to ask for **directions**.

17. To **treat** minor diarrhea, drink plenty of liquids, especially tea, water, and carbonated beverages, **eat soup, yogurt, salty crackers, and bananas, and avoiding milk, butter, eggs, and meat for twenty-four hours**.

18. The new electric typewriters are equipped **not only** with an element for foreign languages but also a key for correcting errors **automatically**.

19. The examiner did not know whether to report the student for cheating or **warning him first**.

20. Jim had spent his vacation traveling in Arizona visiting some of the **Indian reservations**, and had **finished** several paintings that he had begun last year.

21. The Smithsonian Institute is famous because **contains** such interesting exhibits as the flag that **was raised over Fort McHenry in 1812**, the airplane that the Wright brothers **built** for their first flight at Kitty hawk and **there are the gowns worn by every first lady since Martha Washington**.
22. Please send me the smallest, most recently published, and less expensive dictionary that you have available.

(A)  (B)  (C)  (D)

23. In order to become a law, a bill must be passed not only by the Senate but also the House of Representatives.

(A)  (B)  (C)  (D)

24. The cloverleaf is a common engineering design for expressways that permits traffic between two intersecting highways to move more safely, efficiently, and with ease.

(A)  (B)  (C)  (D)

25. A new product should be judged not by the promises made in commercials and advertisements, but also by the results demonstrated in actual use.

(A)  (B)  (C)  (D)
EXERCISE EIGHTEEN: PROBLEMS WITH STRUCTURE

PREVIEW: STRUCTURE

In some sentences in Part B, you will be asked to identify errors in structure. Remember, structure is the correct use of verbs, pronouns, nouns, modifiers, comparatives, and connectors.

1. Of the two lectures, the ___________ was by far the ___________, partly because the person who delivered it ___________ such a dynamic style.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

2. That modern science ___________ to assist women who are unable ___________ to give birth to babies by normal ___________ is one of the miracles of the twentieth century.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

3. After he had researched his paper and ___________ it he found some additional data that he should ___________ have included.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

4. Because of the light, the city seemed ___________ from the way that I ___________ remembered it.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

5. The Federal Aviation Agency ___________ all DC-10 aircraft so they can be checked for ___________ possible problems in the design of the under-wing jet systems.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

6. The colonel wanted ___________ , but the general insisted that he ___________ everything ___________ necessary in order ___________ win the battle.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

7. There are not many people which adapt to a new culture without ___________ some disorientation at ___________.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

8. Bob wishes that his wife ___________ why he has not had time to write her lately.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

9. Because of the accident, the judge forbade Joe and ___________ ___________.
   (A) ___________ (B) ___________ (C) ___________ (D) ___________

10. After he had ___________ the program thought the computer, he ___________ that he had forgotten to do the ___________.
    (A) ___________ (B) ___________ (C) ___________ (D) ___________

11. Most small appliances have ninety-days guarantees that ___________ the purchaser to free repair or ___________.
    (A) ___________ (B) ___________ (C) ___________ (D) ___________
12. Although everyone in our group was pleased with his meal, Mrs. Brown insisted on complaining that the coffee tasted badly.

13. Let you and I agree to cancel that last shipment unless the company meets the conditions of our original contract.

14. His recommendation that the Air Force investigates the UFO sightings was approved by the commission and referred to the appropriate committee.

15. Although she seems to be very mature, Ann is much younger as the other girls in her class.

16. Nuclear power plants are still supported by the Society of Professional Engineers in spite the unfortunate accident at Three Mile Island.

17. Miss Smith returned home quite lately that night to find that someone had broken into her garage and stolen her car.

18. If Mary would have been more careful in proofreading her dissertation, she would not have had to get it typed again.

19. The more that she tried to remove the stain, the worst it looked.

20. The national television networks have been criticized for not showing much good movies during prime time.

21. This is the athlete whom everyone says will win the gold medal at the winter Olympic Games.

22. If you would have checked your answer sheet more carefully, you would have corrected these errors yourself.

23. It was her who suggested that he go to New York in order to get a direct flight.

24. We veterans often fail taking advantage of the scholarship programs at the university level.

25. It is necessary that the directors will sign all of the copies, not just the top one.
1. (D) *That* is used before the subject *he* and the verb word *rest* in the clause after the verb *insists*.

2. (C) *Neither* is used before the auxiliary *does* followed by the subject *she*. *She doesn’t either* would also be correct.

3. (A) *Hadn’t* and the participle *had* are *used* after the verb *wish* in the main clause.

4. (D) * Wouldn’t* is used before the subject *you* and the verb *like* in an invitation.

5. (B) *Do not* is used before the verb word *submit* to express a negative command.

6. (C) *Am* is used before the verb phrase *used to* followed by the –*ing* for *eating* to express habit.

7. (A) *Had* is used before the person *them* followed by the verb word *practice* to express an activity caused by *the coach*.

8. (B) The –*ing* form *answering* is used after the verb phrase *not mind*.

9. (C) *Had better* is used before the verb word *reserve* to express advice.

10. (C) *Weren’t* is used after *if* to express a condition contrary to fact.

11. (A) *Didn’t she* is used to agree with *you sister* and *used to visit* in the main clause.

12. (C) *Had* is used before the participle *come* in the conditional clause.

13. (B) *Would rather* is used before the subject *you* and the past verb *didn’t* followed by the verb word *do* to express preference.

14. (A) *Must have* is used before the participle *left* to express a logical conclusion.

15. (C) *Had* is used before the participle *rung* to refer to an activity *already* in the past.

Enter score on face sheet pages 135-137
Exercise Two: Problems With Verbs (Part 2)

1. (B) That is used before the subject he followed by would and the verb word call after the verb phrase had hoped.

2. (A) Did is used before the subject I to agree with lived in the main clause. And I did too would also be correct.

3. (B) Know how is used before the infinitive to take to express ability or skill. Does your new secretary know shorthand would also be correct.

4. (B) Had is used before the person his big brother followed by the verb word tie to express an activity caused by Tommy.

5. (C) Were is used after the verb wish in the main clause.

6. (A) The verb word begin is used in the clause after the verb recommends.

7. (C) Shall we is used to agree with let’s in the main clause.

8. (A) Would ['d] rather is used before not and the verb word have to express preference.

9. (C) Would you please is used before not followed be the verb word write to express a negative command.

10. (D) Was is used before the verb phrase used to followed by the –ing form sitting to express a habit.

11. (D) Were is used after if to express a condition contrary to fact.

12. (B) Hadn’t is used before the participle had in the conditional clause.

13. (A) Hasn’t he is used to agree with he’s [he has] in the main clause.

14. (D) The –ing form seeing is used after the verb phrase looking forward to.

15. (A) The verb word be is used in the clause after the impersonal expression it is imperative.

Enter score on face sheet pages 135-137
Exercise Three: Problems With Verbs (Part 3)

1. (D) *Need* is used before the –*ing* form *adjusting* to express necessity for repair. *The brakes need to be adjusted* would also be correct.

2. (A) *Could* is used before the verb word *go* after the verb *wish* in the main clause.

3. (C) *Knows how* is used before the infinitive to use to express ability of skill. *Miss Smith knows the equipment* would also be correct.

4. (D) *Used to* is used before the verb word *go* to express a habit in the past.

5. (C) *Must have* is used before the participle *understood* to express a logical conclusion.

6. (C) *Wouldn’t* is used before the subject *you* followed by *rather* and the verb word *sit* to express preference.

7. (D) *That* is used before the subject *he* and the verb word *stay* in the clause after the verb *insisted*.

8. (B) The participle *written* is used after *had* to refer to an activity in the past.

9. (B) *Neither* is used before the auxiliary *would* followed by the subject *the other driver*. *The other driver wouldn’t either* would also be correct.

10. (B) *Doesn’t* is used in the clause of condition to agree with *we’ll [we will]* in the clause of result.

11. (D) *Have* is used before the thing your *temperature* followed by the participle *taken* to express an activity caused by someone else.

12. (C) The infinitive *to pass* is used after the verb *fails*.

13. (C) That is used before the subject she followed by would and the verb word *answer* after the verb phrase had hoped.

14. (C) The verb word *starts* is used after the verb phrase *had better* and the –*ing* form *getting up* is used after the verb *start*.

15. (D) *Is it* is used to agree with the subject *today’s weather* and the verb is in the main clause.

Enter score on face sheet pages 135-137
Exercise Fourteen: Problems With Introductory Verbal Modifiers

1. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *After finishing Roots* is misplaced because it does not precede the noun it modifies, *author Alex Haley*.

2. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *A competitive sport* is misplaced because it does not precede the noun it modifies, *gymnastics*.

3. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Carefully soaking* should be *(you) carefully soak* to provide a noun for the introductory verbal phrase to remove stains from permanent press clothing.

4. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Found in Tanzania by Mark Leakey* is misplaced because it does not precede the noun it modifies, *the three-million-year-old fossils*.

5. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *After fighting the blaze for three days* is misplaced because it does not precede the noun it modifies, *the fire fighters*.

6. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *After finishing their degrees* is misplaced because it does not precede the noun it modifies, *the students*.

7. (D) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Columbus’s final resting place* should be *Columbus* because the man, not the place, is modified by the verbal phrase *Originally having been buried in Spain*.

8. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *New York audiences received the new play* should be *the new play was received by New York audiences* because the play, not the audiences, is modified by the verbal phrase *written by Neil Simon*.

9. (C) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Survival is assured* should be *animals assure survival* because the animals, not the survival, is modified by the verbal phrase *by migrating to a warmer climate every fall*.

10. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *A memorial fund will be established* should be *family and friends will establish a memorial fund* because the family and friends, not the memorial fund, are modified by the verbal phrase *saddened by the actor’s sudden death*.

11. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Dental floss should be used* should be *(you) use dental floss* to provide a noun for the introductory verbal phrase to prevent cavities.
12. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *The Senate committee’s discovery* should be *The Senate committee discovered* because the committee, not the discovery, is modified by the verbal phrase *while researching the program of violent crime*.

13. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Trying to pay for a purchase with cash* is misplaced because it does not precede the noun it modifies, *customers*.

14. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *After reviewing the curriculum* is misplaced because it does not precede the noun it modifies, *faculty*.

15. (D) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Hank Aaron's record* should be *Hank Aaron* because the man, not the record, is modified by the verbal phrase *having hit more home runs than any other player in the history of baseball*.

16. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Banned in the U.S.* is misplaced because it does not precede the noun it modifies, *fluorocarbons*.

17. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *To avoid jet lag* is misplaced because it does not precede the noun it modifies, *patients*.

18. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *After cooking in the microwave oven for five minutes* is misplaced because it does not precede the noun it modifies, *most meat dishes*.

19. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Traditionally named for women* is misplaced because it does not precede the noun it modifies, *a hurricane*.

20. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *While testifying* is misplaced because it does not precede the noun it modifies, *witnesses*.

21. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *By reading the instructions carefully* is misplaced because it does not precede the noun it modified.

22. (B) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Her credit* should be *the woman* because she, not the credit, is modified by the phrase, *having been divorced*.

23. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Attempting to smuggle drugs into the country* is misplaced because it does not precede the noun it modifies, *criminals*.

24. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *While trying to build a tunnel through the Blue Ridge Mountains* is misplaced because it does not precede the noun it modifies.

25. (A) An introductory verbal phrase followed by a comma should immediately precede the noun that it modifies. *Founded in 1919* is misplaced because it does not precede the noun it modifies, *the Institute for International Education*.

Enter score on face sheet pages 135-137
Exercise Fifteen: Problems With Parallel Structure

1. (D) Ideas in a series should be expressed by parallel structures. That it would adjourn should be to adjourn to provide parallelism with the infinitives to cancel and to approve.

2. (D) Ideas in a series should be expressed by parallel structures. It is should be deleted to provide parallelism among the adjectives fast, safe, and convenient.

3. (B) Ideas in a series should be expressed by parallel structures. Not only popular should be popular not only to provide parallelism between the adverbial phrases in the United States and abroad.

4. (B) Ideas in a series should be expressed by parallel structures. Tuning should be turn to provide parallelism with the verb words lock and walk.

5. (A) Ideas in a series should be expressed by parallel structures. Making should be to make to provide parallelism with

6. (C) Ideas in a series should be expressed by parallel structures. To modify should be to make to provide parallelism with the phrase by changing.

7. (C) Ideas in a series should be expressed by parallel structures. Awareness should be aware to provide parallelism with the adjectives intelligent and capable.

8. (B) Ideas in a series should be expressed by parallel structures, and inclusives should be used in coordinating pairs. But should be but also to coordinate with not only.

9. (D) Ideas in a series should be expressed by parallel structures. Signing your name should be the signature to provide parallelism with the nouns the address, the inside address, the salutation, the body, and the closing.

10. (B) Ideas in a series should be expressed by parallel structures. To do should be by doing to provide parallelism with the phrase by using.

11. (A) Ideas in a series should be expressed by parallel structures. Being introduced should be to be introduced to provide parallelism with the infinitive to read.

12. (C) Ideas in a series should be expressed by parallel structures. And not should be nor to coordinate with neither.

13. (C) Ideas in a series should be expressed by parallel structures. Who should be deleted to provide parallelism among the verbs understands, knows, and works.

14. (A) Ideas in a series should be expressed by parallel structures. Ice skating should be to go ice skating to provide parallelism with the infinitive to go skiing.

15. (D) Ideas in a series should be expressed by parallel structures. The operation was begun should be began the operation to provide parallelism with the past, active verb examined.
16. (B) Ideas in a series should be expressed by parallel structures. *Because of the time* should be *because there was little time* to provide parallelism with the clause *because we were not sure.*

17. (C) Ideas in a series should be expressed by parallel structures. *Avoiding* should be *avoid* to provide parallelism with the verb words *drink* and *eat.*

18. (B) Ideas after inclusives should be expressed by parallel structures. A *key* should be *with a key* to provide parallelism with the phrase *with an element.*

19. (C) Ideas in a series should be expressed by parallel structures. *Warning* should be *to warn* to provide parallelism with the infinitive *to report.*

20. (D) Ideas in a series should be expressed by parallel structures. *Had finished* should be *finishing* to provide parallelism with the –ing forms *traveling* and *visiting.*

21. (D) Ideas in a series should be expressed by parallel structures. *There are* should be deleted to provide parallelism among the nouns *the flag, the airplane,* and *the gowns.*

22. (D) Ideas in a series should be expressed by parallel structures. *Less* should be *least* to provide parallelism with the superlative adjectives the *smallest* and *most recently published.*

23. (D) Ideas after inclusives should be expressed by parallel structures. *The House of Representatives* should be *by the House of Representatives* to provide parallelism with the phrase *by the Senate.*

24. (D) Ideas in a series should be expressed by parallel structures. *With ease* should be *easily* to provide parallelism with the adverbs *safely* and *efficiently.*

25. (C) Ideas after exclusives should be expressed by parallel structures and exclusives should be used in coordinating pairs. But *also* should be *but* to coordinate with *not.*

Enter score on face sheet pages 135-137
Exercise Eighteen: Problems With Structure

1. (B) *The best* should be *the better* because two, not three lectures, are being compared.

2. (A) *Knows to assist* should be *knows how to assist* because *knows how* is used before the infinitive *to assist*.

3. (A) *Wrote* should be *written* because a participle, not a past form, is used with *had*.

4. (B) *Differently* should be *different* because an adjective, not an adverb, is used after the verb of the senses the *seem*.

5. (C) *So* should be *so that* because it introduces a clause of purpose,

6. (C) *Do* should be *doing* because an –*ing* form, not a verb word, is used after the verb *continue*.

7. (C) *Which* should be *who* because it refers to people, not things.

8. (A) *Understands* should be *understood* because a past form, not a present form, is used after the verb *wishes*.

9. (B) *From* should be deleted because a preposition is not used after the verb *forbid*.

10. (A) *Ran* should be *run* because a participle, not a past form, is used with *had*.

11. (B) *Ninety-days* should be *ninety-day* because an adjective does not have a plural form.

12. (D) *Badly* should be *bad* because an adjective, not an adverb, is used after the verb of the senses *taste*.

13. (A) *I* should be *me* because an objective pronoun is used after *let*.

14. (A) *Investigates* should be *investigate* because the word *recommendation* requires a verb word.

15. (C) *As* should be *than* because *than* is used after the comparative *younger*.

16. (C) *In spite* should be *in spite of* because *in spite of* introduces a condition with an unexpected result. *Despite* would also be correct.

17. (A) *Lately* should be *late* because the adverb form of *late* does not have an –*ly* ending.

18. (A) *Would have been* should be *had been* because *had* and a participle are used in the condition and *would have* and a participle are used in the result.

19. (C) *The worst* should be *the worse* because comparative forms are used with the in double comparisons that express cause and result.
20. (C) *Much* should be *many* because *many* is used with the count noun *movies*.

21. (B) *Whom* should be *who* because it is the subject of the verb *will win*.

22. (A) *Would have checked* should be *had checked* because *had* and a participle are used in the condition and *would have* and a participle are used in the result.

23. (A) *Her* should be *she* because a subject pronoun is used after *it was*

24. (B) *Taking* should be *to take* because an infinitive, not an –*ing* form, is used after the verb *fail*.

25. (A) *Will sign* should be *sign* because a verb word is used after the impersonal expression *is it necessary*.

**Enter score on face sheet pages 135-137**
Dangling modifiers create a sentence that lacks an appropriate subject.  

Looking down at the valley, the colors were beautiful.  

*Dangling modifier*

Who is looking at the valley? In this sentence, the phrase *Looking down at the valley* modifies *colors*. Since colors cannot look at a valley, the writer must create an appropriate subject.  

Looking down at the valley, we saw that the colors were beautiful.  

*(Corrected Sentence)*

To fix a dangling modifier, create a logical subject for the modifier  

Walking to the office, the police car pulled over the red truck  

Walking to the office, I saw the police car pull over the red truck.  

*(Corrected by creating a subject)*

While I was *walking to the office*, I saw the police car pull over the red truck.
Directions: Choose the one best answer to each question. Questions 1 through 6 refer to the following paragraph.

(1) Comets are icy, celestial bodies that have one or two tails. (2) We can see comets without a high-power telescope only when they orbit very near the sun. (3) The sun melts the ice, creating a vapor trail of shining dust particles. (4) We watch their swift, brilliant journeys, knowing they are very far away. (5) With dazzling tails behind them, we are astonished by their beauty. (6) Looking up into the night sky, the unusual light show is awesome.

1. Sentence 2: We can see comets without a high-power telescope only when they orbit very near the sun.

If you rewrote sentence 2 beginning with: **Without a high-power telescope**, the next words should be:
(1) We can see
(2) We can see
(3) Comets orbits
(4) When they orbit
(5) Very near the sun

2. Sentence 4: We watch their swift, brilliant journeys, knowing they are very far away.

If you rewrote sentence 4 beginning with: **Knowing they are very far away** the next words should be:
(1) Comets are
(2) We can see
(3) We had watched
(4) Their swift, brilliant journeys
(5) There swift, brilliant journeys

3. Sentence 5: With dazzling tails behind them, **we are astonished by their beauty**.

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).
(1) We are astonished by their beauty.
(2) We are astonished by comets by their beauty.
(3) We are astonishing by their beauty.
(4) Comets are astonished by their beauty.
(5) Comets astonish us by their beauty.
4. Sentence 6: Looking up into the night sky, the unusual light show is awesome.

Which correction should be made to sentence 6?

(1) Remove the comma after sky
(2) Insert you see after sky,
(3) Insert we all agree that after sky,
(4) Insert a comma after show
(5) No correction is necessary

5. Looking for an adventure, a windjammer cruise can be exciting and fun.

Which is the best way to write the underlined portion of this sentence? If the original is the best way choose option (1)

(1) Adventure, a windjammer
(2) Adventure; a windjammer
(3) Adventure, we found that a windjammer
(4) Adventure, exciting and fun
Sentence Structure
Parallel Structure

Parallel structure means that equal and related words and phrases must use the same grammatical form.

- Verbs, nouns, adjectives, or adverbs in a series must use the same grammatical form.
  
  She is happy, charming, and has beauty. (Has beauty is not parallel with the adjectives happy and charming.)
  
  She is happy, charming, and beautiful. (correct)
  
  The as shows the desk’s size, color, and how much it costs.
  (How much it costs is not parallel with the nouns size and color.)

- Phrases in a series must use the same grammatical form.

  She makes quilts for relaxation, entertainment, and to earn extra money.
  (To earn extra money is not parallel with the nouns relaxation and entertainment.)
  
  She makes quilts for relaxation, entertainment, and extra money. (correct)

6 QUESTIONS
Directions: Choose the one best answer to each question. Questions 1 through 3 refer to the following paragraph.

(1) The tall Afghan hound are an ancient dog breed. (2) the Afghan, which has a curling tail, is long-eared, and has long legs. (3) The Afghan also has thick, long flowing hair. (4) Afghans are aloof, are stubborn, and have a sweet disposition. (5) For such a large and stately dog the Afghan is surprisingly affectionate. (6) Afghans like to hunt, to run, and being by themselves outside.

1. Sentence 2: The Afghan, which has a curling tail, is long-eared, and has long legs.

If you rewrote sentence 2 beginning with; With a curling tail, long ears, and the next word should be:

(1) Its long legs,
(2) Has long legs
(3) Legs that are long,
(4) Runs on long legs
(5) Long legs,

2. Sentence 4: Afghans are aloof, are stubborn, and have a sweet disposition.

If you rewrote sentence 4 beginning with Afghans are aloof, stubborn, and the next word or words should be:

(1) Have a sweet disposition
(2) Sweet
(3) Sweetly
(4) Are sweet dispositioned
(5) With a sweet disposition

3. Sentence 6: Afghan like to hunt, to run, and being by themselves outside.

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

(1) Being by themselves
(2) To be by themselves
(3) Want to be by themselves
(4) Are glad to be by themselves
(5) Be by themselves
Questions 4 through 6 refer to the following paragraph.

(1) In October, the states of Vermont and Maine have spectacular colors, crisp weather, and leaves that fall. (2) Although they are green in the spring, the leaves turn bright red, deep brown, and yellow that shines in the fall. (3) The lake or ocean water is blue, clear, and it sparkles. (4) For many years, tourists have travel long distances to see these sights. (5) Maine and Vermont have become a favorite destination for hikers, bicyclists, and people who take pictures. (6) Our visitors always enjoy the fresh country air and the beautiful colors of the New England landscape.

4. Sentence 1: In October, the states of Vermont and Maine have spectacular colors, crisp weather, and leaves that fall.

Which is the best way to write the underlined portion of this sentence? If the original is the best way choose option (1)

(1) Leaves that fall
(2) Leaves who fall
(3) Leaves are falling
(4) Falling leaves
(5) Leaves fall

6. Sentence 3: the lake or ocean water is blue, clear, and it sparkles.

Which correction should be made to sentence 3?

(1) Insert a comma after lake
(2) Change is to are
(3) Remove the comma after blue
(4) Change it sparkles to sparkling
(5) Change it sparkles to which sparkles

7. Sentence 5: Maine and Vermont have become a favorite destination for hikers, bicyclists, and people who take pictures.

Which correction should be made to sentence 5?

(1) Change have to had
(2) Remove the comma after hikers
(3) Insert a comma after people
(4) Replace people who take pictures with photographers
(5) No Corrections necessary
Page 165 Answers

Lesson 5  Dangling Modifiers

1.  1  
2.  2  
3.  5  
4.  3  
5.  3  

Lesson 6  Parallel Structure

1.  5  
2.  2  
3.  2  
4.  4  
5.  4  
6.  4  
7.  4  

Enter scores on face sheet page 137
Quiz Answers
Lessons 5 and 6

Lesson 5  Dangling Modifiers
1.  1
2.  2
3.  5
4.  3
5.  3

Lesson 6  Parallel Structure
1.  5
2.  2
3.  2
4.  4
5.  4
6.  4
7.  4

Enter scores on face sheet page 137
Exercise 2  **REGULAR PLURALS**

A plural noun names *more than one* person, place, thing, or idea:
Many *families* buy homes to save money on taxes.

There are rules for forming the plurals of nouns. Here are the three most basic rules:

1) The plural of most nouns is formed by adding *s*:
   *Car, cars; sale, sales; desk, desks*

2) The plural of nouns ending with *s, sh, ch, x,* or *z* is formed by adding *es*:
   *Brush, brushes; box, boxes*

3) The plural of nouns that end with *y* after a consonant is formed by changing *y* to *i* and adding *es*:
   *Baby, babies; city, cities*

Note: The plural of nouns that end with *y* after a *vowel* is formed by adding *s*:
   *Day, days; attorney, attorneys*

---

**DIRECTIONS:** If there is an incorrect plural form in the group of nouns, circle it. The write the correct spelling on the line. If all of the plurals are correct, write “OK” on the line.

<table>
<thead>
<tr>
<th>Example:</th>
<th>ducks</th>
<th>wishes</th>
<th>catches</th>
<th>crashes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. eagles</td>
<td>thrushes</td>
<td>parrots</td>
<td>finches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. delays</td>
<td>pennys</td>
<td>keys</td>
<td>stories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. watches</td>
<td>bracelets</td>
<td>necklaces</td>
<td>crownes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. buggies</td>
<td>candies</td>
<td>bluejays</td>
<td>blueberrys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. riches</td>
<td>hopes</td>
<td>kisses</td>
<td>witches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. turkeys</td>
<td>studies</td>
<td>puppys</td>
<td>cavities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. blazes</td>
<td>dashes</td>
<td>blotches</td>
<td>blanketes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. secretarys</td>
<td>directories</td>
<td>mysteries</td>
<td>volleyes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---
Exercise 3  REGULAR PLURALS II

Here are more rules for forming the plurals of nouns.

4) The plural of nouns ending with \textit{f} or \textit{fe} is sometimes formed by adding \textit{s}; sometimes it is formed by changing the \textit{f} or \textit{fe} to \textit{v} and adding \textit{es}:
   - roof, roofs; thief, thieves; knife, knives

5) The plural of most nouns ending in \textit{o} is formed by adding \textit{s}. Sometimes the same words can end either in \textit{s} or \textit{es}; check your dictionary if you are not sure. The following words always end in \textit{es}:
   - tomato, tomatoes; potato, potatoes; echo, echoes; hero, heroes; torpedo, torpedoes

6) The plural of hyphenated nouns is formed by adding \textit{s} to the main noun:
   - father-in-law, fathers-in-law; looker-on, lookers-on

7) The plural of nouns ending with \textit{ful} is formed by adding \textit{s} to the end of the word:
   - spoonful, spoonfuls

Directions: If there is an incorrect plural form in the group of nouns, circle it. Then write the correct spelling on the line. If all of the plurals are correct, write “OK” on the line.

Example: videos pianoes solos heroes

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>tomatoes</td>
<td>potatoes</td>
<td>tattoos</td>
<td>toes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>sisters-in-law</td>
<td>half-brothers</td>
<td>attorney’s-at-laws</td>
<td>masters-of-ceremonies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>mouthfuls</td>
<td>bagsful</td>
<td>handfuls</td>
<td>drawerfuls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>cousins-to-be</td>
<td>mothers-in-law</td>
<td>great-aunts</td>
<td>brother-in-laws</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>echoes</td>
<td>shelves</td>
<td>autos</td>
<td>wives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>lives</td>
<td>bookshelves</td>
<td>knives</td>
<td>beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>altos</td>
<td>stereos</td>
<td>photos</td>
<td>radios</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>leafs</td>
<td>proofs</td>
<td>halves</td>
<td>calves</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>banjos</td>
<td>burros</td>
<td>cellos</td>
<td>sopranos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>mosquitoes</td>
<td>hoboes</td>
<td>videos</td>
<td>potatos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>briefs</td>
<td>pufis</td>
<td>tarifis</td>
<td>safes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>cupsful</td>
<td>armfuls</td>
<td>bowlfuls</td>
<td>boxfuls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>memos</td>
<td>cameos</td>
<td>studioes</td>
<td>duos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>lookers-on</td>
<td>runners-on</td>
<td>brides-to-be</td>
<td>senator-elects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercise 4  IRREGULAR PLURALS

Below are examples of plural nouns with different types of irregular spellings.

8) For some nouns, the plural form is the same as the singular form:
   one fish, two fish; one deer, two deer
9) Some nouns can be used only in the plural form:
    Binoculars; scissors
10) The plural of some nouns is formed by changing the spelling:
    Tooth, teeth; mouse, mice; child, children; person, people
11) The plural of nouns ending with man, woman, or child is formed by using the plural forms men,
    women, or children
12) The plural of some nouns ending in is is formed by changing is to es:
    crisis, crises; basis, bases; hypothesis, hypotheses
13) The plural of some nouns ending in um or on is formed by changing the um or on to a:
    datum, data; memorandum, memoranda; criterion, criteria; phenomenon, phenomena

DIRECTIONS: If there is an incorrect plural form in the group of nouns, circle it. Then write the correct spelling on the line. If all of the plurals are correct, write “OK” on the line.

<table>
<thead>
<tr>
<th>Example</th>
<th>teeth</th>
<th>scissors</th>
<th>memorandes</th>
<th>parentheses</th>
<th>memoranda</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. mice</td>
<td>trout</td>
<td>fish</td>
<td>sheep</td>
<td></td>
<td>memoranda</td>
</tr>
<tr>
<td>2. children</td>
<td>repairmen</td>
<td>crisies</td>
<td>hypotheses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. sunglass</td>
<td>trousers</td>
<td>shorts</td>
<td>jeans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. policemans</td>
<td>bases</td>
<td>feet</td>
<td>washerwomen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. cattle</td>
<td>pants</td>
<td>data</td>
<td>tooths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. clothes</td>
<td>slacks</td>
<td>overalls</td>
<td>briefs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. servicewomans</td>
<td>lice</td>
<td>eyeglasses</td>
<td>moose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. swordfish</td>
<td>deers</td>
<td>cows</td>
<td>horses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. godchilds</td>
<td>godparents</td>
<td>chairwoman</td>
<td>chairmen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. analyses</td>
<td>criterias</td>
<td>memoranda</td>
<td>media</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Exercise 5  PLURALS REVIEW**

**DIRECTIONS:** Write the plural form of each noun.

*Example: handful*

1. city________ 1.____________
2. church________ 2.____________
3. chairwoman________ 3.____________
4. crisis________ 4.____________
5. monkey________ 5.____________
6. brother-in-law________ 6.____________
7. baby________ 7.____________
8. tooth________ 8.____________
9. belief________ 9.____________
10. solo________ 10.____________
11. check________ 11.____________
12. potato________ 12.____________
13. wife________ 13.____________
14. story________ 14.____________
15. light________ 15.____________
16. replay________ 16.____________
17. spoonful________ 17.____________
18. fish________ 18.____________
19. bookshelf________ 19.____________
20. grandchild________ 20.____________
21. vacancy________ 21.____________
22. crash________ 22.____________
23. annex________ 23.____________
24. quiz________ 24.____________
25. criterion________ 25.____________
As you have seen, the past tense of most verbs is formed in a regular manner, by adding *ed*:

\[
\text{Look, looked; pick, picked; rain, rained; jump, jumped}
\]

Some verbs, called irregular verbs, form the past tense differently:

\[
\text{Bring, brought; eat, ate; come, came; sing, sang}
\]

To be certain of the correct past tense form of any irregular verb, you can check the dictionary.

**DIRECTIONS:** Underline the correct past tense verb in each sentence.

**Example:** No one (weared, wore) a warm jacket.

1. Ryan (throwed, threw) the ball to the plate.
2. I (wrote, writ) a seven-page letter to Carlos.
3. When it got dark, we all (ran, run) home.
4. Gilda (slept, sleeped) until past noon.
5. The mail workers (striked, struck) for higher pay.
6. Yesterday, Diana Nyad (swam, swum) across the bay.
7. Lou (catched, caught) a cold on his camping trip.
8. The bird (flew, flied) over the rainbow.
9. Someone just (stoled, stole) a car from the parking lot.
10. The crowd (been, was) at the race since early afternoon.
11. The announcer (sayed, said) the show would go on.
12. Leonard and Doris (losed, lost) everything in the fire.
13. I really (feeled, felt) awful about their bad luck.
14. Everyone (saw, seen) the fireworks.
15. Ms. Johnson (teached, taught) math for twenty years.
Besides the simple present, past, and future, there are other, more complicated, tenses a verb can take.

In addition, on verb form—the infinitive—does not reflect different verb tenses. As its name implies, the infinitive is “timeless”:

We like to go there. We wanted to go there last night. We plan to go there tomorrow.

DIRECTIONS: Before each sentence below, the base form of the verb is written in parentheses. Decide on the correct form of the verb needed to fill in the blank in the sentences. Write the correct verb form in the blank.

Example: (bring) Has Lu brought her boys to the class?

1. (eat) Have you ____________ yet?
2. (see) Everyone had _______________ the movie.
3. (go) When will you ___________ to Washington?
4. (write) Davida decided _______________ a letter to her boyfriend yesterday.
5. (write) Have you _______________ down you Social Security number?
6. (get) A minute ago Mark _______________ a flashlight so we could see.
7. (feel) I’ve never _______________ so sick before.
8. (speak) Has the main character _______________ yet?
9. (hurt) Ms. Miller just _______________ herself on the rough edges of the desk.
10. (hear) We haven’t _______________ from the unemployment office.
11. (get) Has Khalil been able _______________ his raise yet?
12. (break) How could the new car have _______________ down already?
13. (sleep) Barry _______________ on the sofa in the living room last night.
14. (leave) When my family _______________ , I felt very lonely.
15. (freeze) The Popsicles haven’t _______________ yet.
16. (do) What are you _______________?
17. (drink) A baby will usually _______________ a bottle a formula every four hours.

(continued)
18. (sweep) Don ____________ the floor before his in-laws arrived.
19. (know) If I had ____________ how late it was, I’d have stayed at home.
20. (think) Freddi promises she will ____________ about our offer.
21. (do) Has Felipe ____________ the project?
22. (buy) Although we had just ____________ the drapes, they looked so awful we returned them.
23. (answer) The operator is ____________ your call now.
24. (go) When you ____________ to school, how large were your classes?
25. (sing) Verna and Mike have ____________ in the choir for years.
26. (eat) I ____________ the liver sausage pizza, and it was revolting.
27. (sit) I ____________ so long that I was stiff.
28. (order) As soon as the waiter comes, we should ____________.
29. (take) The plane will be ____________ off on time this morning.
30. (try) We are ____________ to save money, but it’s very difficult.
31. (depend) You had better not ____________ the teacher for getting good grades, It’s mostly up to you.
Answer Key

EXERCISE 1
1. 2  5. 1
2. 2  6. 3
3. 3  7. 5
4. 1  8. 4

EXERCISE 2
1. OK
2. pennies
3. crowns
4. blueberries
5. witches
6. puppies
7. blankets
8. secretaries

EXERCISE 3
1. tomatoes
2. attorneys-at-law
3. bagfuls
4. brothers-in-law
5. OK
6. knives
7. photos
8. leaves
9. OK
10. potatoes
11. OK
12. cupfuls
13. studios
14. senators-elect

EXERCISE 4
1. OK
2. crises
3. sunglasses
4. policemen
5. teeth
6. OK
7. servicewomen
8. deer
9. godchildren
10. criteria

EXERCISE 5
1. cities
2. churches
3. chairwomen
4. crises
5. monkeys
6. brothers-in-law
7. babies
8. teeth
9. beliefs
10. solos
11. checks
12. potatoes
13. wives
14. stories
15. lights
16. replays
17. spoonfuls
18. fish
19. bookshelves
20. grandchildren
21. vacancies
22. crashes
23. annexes
24. quizzes
25. criteria

EXERCISE 6
1. OK
2. bus’s
3. landlord’s
4. miners’
5. weeks’
6. OK
7. protesters’
8. Jones’s
9. parents’
10. OK
11. workers’
12. Gross’s
13. OK
14. today’s
15. Boys’

EXERCISE 7
1. Jose’s
2. David’s
3. OK
4. people’s
5. OK
6. women’s
7. Steven’s
8. OK
9. Sally’s
10. OK

EXERCISE 8
1. fewer 5. OK
2. These 6. advice
3. OK 7. many
4. less 8. deal

EXERCISE 9
1. 1  6. 3
2. 1  7. 1
3. 5  8. 1
4. 3  9. 2
5. 1  10. 4

EXERCISE 10
1. stirred
2. is
3. reported
4. slips, will break
5. will decide
6. left, was
7. is
8. give
9. dimmed, booed
10. pour, cause
11. saw, hit
12. slams, jumps
13. baked, were
14. spread
15. write
16. am
17. thinks
18. finish, take

Enter Score on face sheets pages 135-137
EXERCISE 11
1. rained 5. dried
2. carried 6. OK
3. OK 7. scrubbed
4. employed 8. committed

EXERCISE 12
1. threw 9. stole
2. wrote 10. was
3. ran 11. said
4. slept 12. lost
5. struck 13. felt
6. swam 14. saw
7. caught 15. taught
8. flew

EXERCISE 13
1. eaten
2. seen
3. go
4. to write
5. written
6. got
7. felt
8. spoken
9. hurt
10. heard
11. to get
12. broken
13. slept
14. left
15. frozen
16. doing
17. drink
18. swept
19. known
20. think
21. done
22. bought
23. answering
24. went
25. sung
26. ate
27. sat
28. order
29. taking
30. trying
31. depend on

EXERCISE 14
1. 2 9. 1
2. 1 10. 1
3. 2 11. 4
4. 3 12. 2
5. 5 13. 5
6. 3 14. 2
7. 4 15. 2
8. 3 16. 3

EXERCISE 15
1. Us
2. Our
3. your
4. mine
5. her
6. himself
7. yourself
8. me
9. I
10. you
11. themselves
12. ours
13. hers
14. We
15. us
16. him
17. themselves
18. theirs
19. her
20. He
21. him
22. they

EXERCISE 16
1. I
2. We, they
3. they
4. He
5. him
6. them
7. her
8. he
9. They, we
10. me
11. us
12. me

EXERCISE 17
1. Whom
2. Who
3. whom
4. who
5. whom
6. who
7. whom
8. whomever
9. whoever
10. whoever
11. whomever
12. whoever

EXERCISE 18
1. their 7. its
2. his 8. their
3. its 9. their
4. its 10. their
5. their 11. their
6. their 12. her

EXERCISE 19
1. stylish; adverb
2. flowers; adjective
3. blanket; adjective
4. cereal; adjective
5. scraped; adverb
6. peanuts; adjective
7. crept; adverb
8. come; adverb
9. go; adverb
10. movies; adjective
11. finished; adverb
12. water; adjective
13. person; adjective
14. sorry; adverb
15. frightened; adverb

Enter Score on face sheets pages 135-137


Lesson
12

Usage
Subject-Verb Agreement

- The subject and verb in a sentence must agree in number. If the subject is singular, the verb must be singular. Likewise, if the subject is plural, the verb must be plural.
  - My computer is not working. (singular subject and verb)
  - Our computers are not working. (plural subject and verb)

- A Compound subject joined by and is plural. It requires a plural verb.
  - The fax machine and the copier are being repaired.

- Singular compound subjects joined by or or nor require a singular verb.
  - Either the fax machine or the copier is being repaired.

- When a singular and plural subject are joined by or or nor, the verb agrees with the closest subject.
  - Neither the fax machine nor the copiers are working.
  - Neither the copiers nor the fax machine is working.
**Directions:** Choose the one best answer to each question. Questions 1 through 5 refer to the following paragraph.

(1) Neither drinking nor sleeping mixes with driving. (2) Some experts view being sleepy behind the wheel like being intoxicated. (3) Driving at night or driving when you’re tired increase the likelihood of an accident. (4) There have been some common danger signs that you are about to fall asleep while driving. (5) Yawning, nodding, and seeing double are three signs of fatigue. (6) Drifting off the road and then jerking the car back into the lane also means you are in danger.

1. Sentence 2: Some experts view being sleepy behind the wheel like being intoxicated.

If you rewrote sentence 2 beginning with **For some experts, being sleepy behind the wheel**

The next word should be

(1) views
(2) is
(3) are
(4) was
(5) being

2. Sentence 3: Driving at night or driving when you’re tired increase the likelihood of an accident.

Which correction should be made to sentence 3?

(1) insert a comma after night
(2) replace you’re with your
(3) insert a comma after tired
(4) change increase to increases
(5) no correction is necessary

3. Sentence 4: There have been some common danger signs that you are about to fall asleep while driving.

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

(1) There have been some common danger signs
(2) Their have been some common danger signs
(3) There have been some common danger signs
(4) There are some common danger signs
(5) There were some common danger signs

4. Sentence 5: Yawning, nodding, and seeing double are three signs of fatigue.

Which correction should be made to sentence 5?

(1) remove the comma after Yawning
(2) replace and with or
(3) change are to is
(4) change are to will be
(5) no correction is necessary

5. Sentence 6: Drifting off the road and then jerking the car back into the lane also means you are in danger.

Which correction should be made to sentence 6?

(1) replace road with rode
(2) insert a comma after lane
(3) change means to mean
(4) change are to was
(5) no correction is necessary

---

**Tip**

A plural verb does not end in –s. If the subject of a sentence is plural and the verb ends in –s, you know that the subject and verb don’t agree. You must correct the sentence.
For Questions 6 though 10 refer to the following paragraph.

(1) In 1755 a group of French settlers were expelled from their adopted homeland. (2) They settle earlier in what is now the Canadian province of Nova Scotia. (3) They called the coastal area where they lived Acadia. (4) However the settlers became victims of the struggle between France and England for control of North America. (5) They scattered throughout the British colonies form Massachusetts to Louisiana. (6) The group that settled in Louisiana came to be known as “Cajuns,” a word derived from “Acadians.” (7) Henry Wadsworth Longfellow’s famous narrative poem “Evangeline” is about the French settlers transplanted to Louisiana.

6. Sentence 2: They settle earlier in what is now the Canadian province of Nova Scotia.

Which correction should be made to sentence 2?

(1) change settle to had settled
(2) change is to was
(3) change is to will be
(4) insert a comma after province
(5) no correction is necessary

7. Sentence 3: They called the coastal area where they lived Acadia.

If you rewrote sentence 3 beginning with Acadia was the name they the next word(s) should be

(1) had called
(2) call
(3) will call
(4) give
(5) called

8. Sentence 4: However the settlers became victims of the struggle between France and England for control of North America.

Which correction should be made to sentence 4?

(1) insert a comma after However
(2) change became to become
(3) change became to will become
(4) insert a comma after France
(5) insert a comma after England

9. Sentence 6: The Group that settled in Louisiana came to be known as “Cajuns,” a word derived from “Acadians.”

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

(1) settled in Louisiana came to be known as “Cajuns,”
(2) will settle in Louisiana came to be known as “Cajuns,”
(3) settled in Louisiana come to be known as “Cajuns,”
(4) settled, in Louisiana, will come to be known as “Cajuns,”
(5) settle in Louisiana came to be known as “Cajuns,”

10. Sentence 7: Henry Wadsworth Longfellow’s famous narrative poem “Evangeline” is about the French settlers transplanted to Louisiana.

Which correction should be made to sentence 7?

(1) change Longfellow’s to Longfellow’s
(2) insert a comma after Longfellow’s
(3) insert a comma after famous
(4) change is to has been
(5) change is to will be
SUBJECT-VERB AGREEMENT

Exercise 19

DIRECTIONS: Block out box A if the sentence is correct. Block out box B if the sentence is incorrect.

1. One of the students have my homework.
   a   b

2. Are any of you going to see the game today?
   a   b

3. One-fourth of the crew was injured in that game.
   a   b

4. One-fourth of the members are ready to vote now.
   a   b

5. Any one of the four is a good as these.
   a   b

6. A box of oranges were received at the depot early this morning.
   a   b

7. Neither you nor he is responsible for my errors.
   a   b

8. Either of the men know the combination to the safe.
   a   b

9. She is one of the girls who is to speak at the rally.
   a   b

10. Every one of the solutions were rejected by the judges.
    a   b

11. Either this group or several of those was the object of his search.
    a   b

12. Pauline together with her four friends wish to see you immediately.
    a   b

13. The carton of old magazines were placed in the basement.
    a   b

14. Everyone except the members of the laboratory squad see this as a major problem.
    a   b

15. Milton and Jerome without the aid of anyone of their friends has solved the problem within the time limits set by the rules.
    a   b

16. There is only one set of rules that I ever follow.
    a   b

17. Here are the set of records that he bought for me.
    a   b

18. Each of the boys who sell newspapers has to have an identification badge.
    a   b

19. Why don’t someone fix the switch for the electric trains?
    a   b

20. Why don’t he mind his own business!
    a   b

21. Edna accompanied by Margie and her friend has left for the station.
    a   b

22. No longer do his incessant cries for assistance bother his calloused guards.
    a   b

23. Neither the time not the energy is his at this moment.
    a   b

24. Each of the contestants have three minutes to work out the puzzle.
    a   b

25. Are there anyone of the players ready to join me in a practice session?
    a   b
### Answer Key

<table>
<thead>
<tr>
<th>Lesson 1 (pages 4-5)</th>
<th>Lesson 6 (pages 19-20)</th>
<th>Lesson 11 (pages 34-35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (4)</td>
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</table>

<table>
<thead>
<tr>
<th>Lesson 2 (pages 7-8)</th>
<th>Lesson 7 (pages 22-23)</th>
<th>Lesson 12 (pages 37-38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (1)</td>
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<tr>
<th>Lesson 3 (pages 10-11)</th>
<th>Lesson 8 (pages 25-26)</th>
<th>Lesson 13 (pages 40-41)</th>
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<td>1. (1)</td>
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<tr>
<th>Lesson 4 (pages 13-14)</th>
<th>Lesson 9 (pages 28-29)</th>
<th>Lesson 14 (pages 43-44)</th>
</tr>
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<tr>
<td>1. (3)</td>
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<tr>
<th>Lesson 5 (pages 16-17)</th>
<th>Lesson 10 (pages 31-32)</th>
<th>Lesson 15 (pages 46-47)</th>
</tr>
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Enter Score on face sheets pages 135-137
Exercise 19

1. b
2. b
3. a
4. a
5. a
6. b
7. a
8. b
9. b
10. b
11. b
12. b
13. b
14. b
15. b
16. a
17. b
18. a
19. b
20. b
21. a
22. a
23. a
24. b
25. b

Enter Score on face sheets pages 135-137
Gerunds and Infinitives

Directions: Put G for verbs followed only by gerunds, I for verbs followed only by infinitives.

G or I

1. refuse ____________ 46. recall ____________
2. delay ____________ 47. hire ____________
3. volunteer ____________ 48. appear ____________
4. beg ____________ 49. practice ____________
5. appreciate ____________ 50. remind ____________
6. mind ____________
7. can’t help ____________
8. persuade ____________
9. keep ____________
10. miss ____________
11. force ____________
12. afford ____________
13. challenge ____________
14. discuss ____________
15. imagine ____________
16. dare ____________
17. arrange ____________
18. allow ____________
19. pretend ____________
20. resent ____________
21. convince ____________
22. tell ____________
23. authorize ____________
24. manage ____________
25. teach ____________
26. mention ____________
27. postpone ____________
28. mean ____________
29. agree ____________
30. cause ____________
31. anticipate ____________
32. struggle ____________
33. warn ____________
34. avoid ____________
35. deny ____________
36. dislike ____________
37. resist ____________
38. demand ____________
39. risk ____________
40. deserve ____________
41. urge ____________
42. suggest ____________
43. quit ____________
44. expect ____________
45. recommend ____________

Gerund = verb + ing  Ex: delay going

Infinitive = to + verb  Ex: decide to go

V + ing
To + V
Quiz Answers
G or I

1. I (refuse to go)
2. G (delay going)
3. I
4. I
5. G
6. G
7. G
8. I
9. G
10. G
11. I
12. I
13. I
14. G
15. G
16. I
17. I
18. I
19. I
20. G
21. I
22. I
23. I
24. I
25. I
26. G
27. G
28. I
29. I
30. I
31. G
32. I
33. I
34. G
35. G
36. G
37. G
38. I
39. G
40. I
41. I
42. G
43. G
44. I
45. G
46. G
47. I
48. I
49. G
50. I