

Skills Inventory Pretest

Part A: Computation

Circle the letter for the correct answer to each problem.

1. $71.8 - 0.5 =$
- A 21.8
B 66.8
C 713
D 71.3
E None of these

2. $x + x + x =$
- F $3 + x$
G x^3
H $3x$
J xxx
K None of these

3. $3.1 \times 0.06 =$
- A 186
B 18.6
C 1.86
D 0.186
E None of these

4.
$$\begin{array}{r} \frac{1}{3} \\ -\frac{1}{6} \\ \hline \end{array}$$
- F $\frac{1}{6}$ H $\frac{1}{18}$
G $\frac{2}{3}$ J $\frac{1}{2}$
K None of these

5. $8[7 - (2 + 2)] =$
- A 24 C 52
B 56 D 42
E None of these

6. 15% of \$75 =
- F \$15
G \$11.25
H \$60
J \$11.05
K None of these

7. $-15 + (-5) =$
- A 20 C 15
B -20 D -15
E None of these

8. $\frac{-30}{5} =$
- F 6
G 5
H -6
J -5
K None of these

9. $\frac{2}{3} + \frac{1}{2} + \frac{1}{4} =$
- A $\frac{1}{3}$ C $1\frac{1}{3}$
B $1\frac{7}{12}$ D $1\frac{1}{2}$
E None of these

10. 14.5% of $\square = 145$
- F 1,000
G 100
H 10
J 0.001
K None of these

11. $0.09 \overline{)4.68}$
- A 52
B 5.2
C 0.52
D 0.052
E None of these

12. $\frac{4}{5} \times 6\frac{2}{3} =$
- F $6\frac{8}{15}$ H $4\frac{12}{15}$
G $16\frac{8}{15}$ J $5\frac{1}{3}$
K None of these

13. What percent of 360 is 30?
- A $83\frac{1}{3}\%$
B 0.12%
C 10.8%
D 12%
E None of these

14. $3x - y(x + 5) =$

- F $\frac{x}{3} - yx + 5$
- G $2x - 5y$
- H $3x - xy - 5y$
- J $3x - y + x + 5$
- K None of these

15. $3.2 + 75 + 0.006 =$

- A 113
- B 78.8
- C 377.6
- D 78.206
- E None of these

16. $4 - (-12) =$

- F 8 H - 8
- G 16 J -16
- K None of these

17. $17 + 6 \times 8 \div 2^2 =$

- A 66 C 29
- B 46 D 41
- E None of these

18. $\sqrt{16} + \sqrt{9} =$

- F $\sqrt{25}$
- G 7
- H 25
- J 12
- K None of these

19. Simplify.

$3(2y^2 + y) - 2y =$

- A $6y^2 - 3y$
- B $9y^2 - 2y$
- C $6y^3 - 2y$
- D $6y^2 + y$
- E None of these

20. Solve for n .

$2n + 8 = -6$

- F 1 H -7
- G -5 J 4
- K None of these

21. $(4^2 + 4) - 15 \div 5 =$

- A 17
- B 1
- C $\frac{3}{5}$
- D $-\frac{3}{5}$
- E None of these

22. $|-5 - 12| =$

- F - 7
- G -17
- H 7
- J 17
- K None of these

23. $8\frac{1}{2}\%$ of \$36 =

- A \$ 2.88
- B \$ 3.06
- C \$ 5.36
- D \$12
- E None of these

24. $(8 \times -4) + -7 \times 2$

- F -72
- G 46
- H -46
- J 72
- K None of these

25. What percent of 350 is 63?

- A 33% C 18%
- B 25% D 13%
- E None of these

Part B: Applied Mathematics

Circle the letter for the correct answer to each question.

1. Darren is a repairman. He drove 9.15 miles for his first service call. He drove 1.7 miles for his second call. Which numbers should Darren round to if he estimates his mileage to the nearest mile?

A 9 and 1 C 9 and 2
B 8 and 1 D 8 and 2

2. Selene received a \$200 bonus for being the top salesperson in her group. She spent \$80 of that on a new jacket. What percent of her bonus did Selene spend on the jacket?

F 25% H 40%
G 35% J 45%

3. What values of m will make the inequality true?

$$3m + 8 < -10$$

A $m < 6$ C $m < -9$
B $m < 8$ D $m < -6$

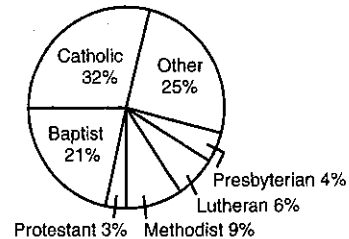
4. What number is a factor of all of the numbers in the box?

36 15 33 72 54

F 9 H 6
G 4 J 3

There are approximately 160 million self-described Christians living in the United States. The graph shows the percent of people who identify with some of the religious groups within that category. Study the graph. Then complete Questions 5–7.

Self-Described Religious Identification of Christians in the U.S.
(Approximately 160 million total)



U.S. Census Bureau: 2003

5. About how many Catholics are there in the United States?

A 32 million C 75 million
B 51 million D 60 million

6. If there are approximately 290 million people living in the United States, what is the ratio of Christians to non-Christians?

F 16:29 H 13:29
G 13:16 J 16:13

7. Approximately what fraction of Christians in the United States do not identify with one of the religions listed in the graph?

A $\frac{1}{3}$ C $\frac{1}{2}$
B $\frac{1}{4}$ D $\frac{1}{5}$

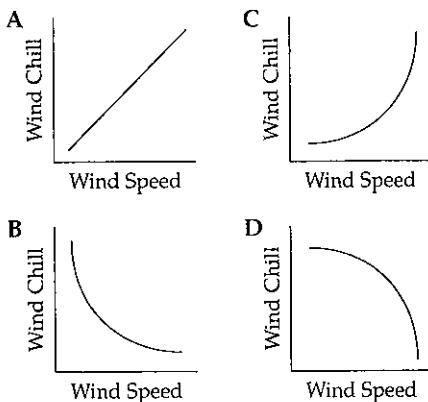
The "wind chill" is a measure of how cold it feels outside. It takes into account both the temperature and the wind speed. This table shows different wind chills. Temperatures are shown at the top of the table. Wind speeds are shown down the left side. Study the table. Then do Numbers 8–11.

	30°F	20°F	10°F	0°F	-10°F	-20°F
5 mph	27	16	7	-5	-15	-26
10 mph	16	3	-9	-22	-34	-46
15 mph	9	-5	-18	-31	-45	-58
20 mph	4	-10	-24	-39	-53	-67
25 mph	1	-15	-29	-44	-59	-74
30 mph	-2	-18	-33	-49	-64	-79
35 mph	-4	-20	-35	-52	-67	-82
40 mph	-5	-21	-37	-53	-69	-84
45 mph	-6	-22	-38	-54	-70	-85

8. It is 20°F outside and the wind speeds rise from 10 miles per hour to 40 miles per hour. How much colder does it feel?

F 3 degrees colder
 G 18 degrees colder
 H 21 degrees colder
 J 24 degrees colder

9. A teacher wants to show how wind chill changes as wind speeds rise. She makes a graph showing the wind chill at 10°F for different wind speeds. Which of these graphs correctly shows the relationship between wind chill and wind speed at 10°F?



10. If the pattern of wind chill at 10 mph continues, what would be the wind chill at 10 mph and -30°F?

F -51 H -62
 G -58 J -68

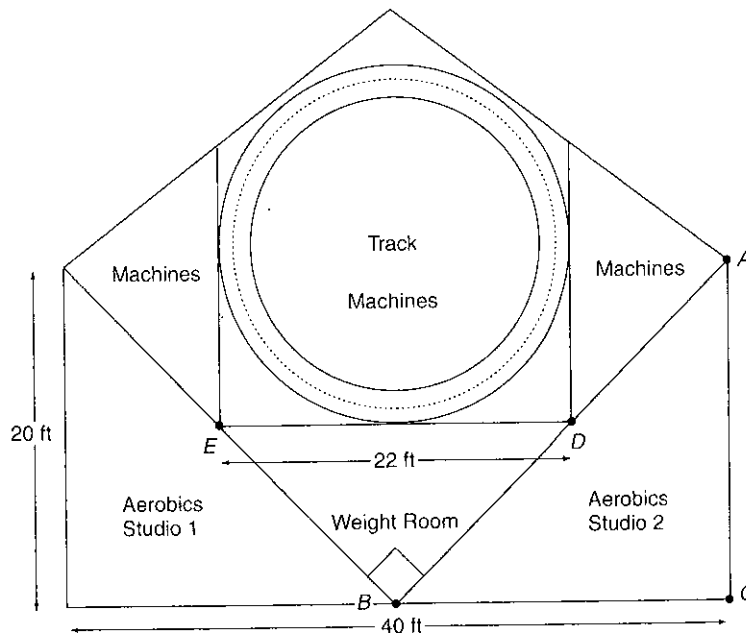
11. The weatherman reports that the wind is from the north at a speed of 25 miles per hour, and the wind chill is -44°F. What is the actual temperature?

A 10°F C -10°F
 B 0°F D -20°F

12. Shirley bought 6 pounds of chocolates for \$5.11 per pound. She had the candy divided into 12 boxes, and paid \$0.75 per box for gift wrapping. Which of these number sentences could you use to find how much Shirley spent in all?

F $(6 \times \$5.11) + \left(\frac{6}{12} \times \$0.75\right) = \square$
 G $6(\$5.11 + \$0.75) = \square$
 H $12(\$5.11 + \$0.75) = \square$
 J $(6 \times \$5.11) + (12 \times \$0.75) = \square$

This map shows the first floor of a popular gym. Study the map. Then do Numbers 13–18.



13. The two aerobics studios form congruent triangles. What is the measure of $\angle ABC$?
- A 30° C 45°
 B 40° D 50°
14. What type of polygon is formed by the outside walls of the gym?
- F an irregular hexagon
 G an irregular pentagon
 H a regular pentagon
 J a regular hexagon
15. What is the length of wall AB ?
- A $\sqrt{800}$ ft C 250 ft
 B 200 ft D $\sqrt{400}$ ft
16. What is the circumference of the outside edge of the track? (Use $\pi = \frac{22}{7}$.)
- F $1,521\frac{1}{7}$ ft H $250\frac{3}{7}$ ft
 G 850 ft J $69\frac{1}{7}$ ft
17. What is the area of each aerobics studio?
- A 400 sq ft
 B 800 sq ft
 C 200 sq ft
 D This cannot be determined.
18. The weight room and aerobics studio 2 form similar triangles. What relationship must exist between the lengths of their walls?
- F $\frac{AB}{BC} = \frac{BD}{BE}$ H $\frac{AB}{DE} = \frac{BC}{BE}$
 G $\frac{AB}{BC} = \frac{BE}{DE}$ J $\frac{AB}{BC} = \frac{BD}{BE}$
19. Light travels at a speed of 299,792,458 meters per second, or approximately 300,000,000 meters per second. Which of these is another way to write 300,000,000?
- A 3×10^9 C 3×10^6
 B 3×10^7 D 3×10^8

Read the passage and study the chart below. Then do Numbers 20–23.

Pablo just got a job writing estimates for Acme Basement Waterproofing. The company gave him this list of guidelines to use when calculating how much it will cost to waterproof a basement wall.

Waterproof outside wall	\$20 per running foot		
Install drainage tile	\$30 per running foot		
Install sump pump	\$675		
	Basement Depth		
	4 feet	6 feet	8 feet
Excavate dirt and expose outside wall	\$60 per running foot	\$80 per running foot	\$100 per running foot

20. Pablo's first customer has a basement that is 6 feet deep. She needs to have 11.5 running feet of the outside wall excavated. Then the wall must be waterproofed and drainage tile must be installed. Which of the following is the best estimate of how much the entire job will cost?
- F \$1,000 H \$1,400
G \$1,200 J \$1,800
21. Pablo's second customer has a basement that is 8 feet deep. He needs 39 running feet of drainage tile installed. He has saved \$4,000 to get this done. How much more will he need for the excavation and tile installation?
- A \$140 C \$2,900
B \$1,070 D \$5,360
22. Pablo's third customer says that her basement is $5\frac{1}{2}$ meters deep. Which of the following is the best estimate of her basement depth in feet? (Use the relationship that 1 meter is about 1.09 yards.)
- F 16 feet H 18 feet
G 17 feet J 19 feet
23. The least expensive sump pump that Acme uses can pump up to 20 gallons of water per hour. How long would it take to drain a 1,000-gallon lake using that pump?
- A 8 hours 20 minutes
B 50 hours
C 5 hours
D 3 hours 45 minutes
24. What number comes next in this sequence?
- 1, 4, 9, 16, 25, ____
- F 30 H 42
G 36 J 51
25. There are 62 people in the Freedom Gospel Choir. Twenty-one of those people are men. What percent of the choir is female?
- A 33.3% C 66.1%
B 50% D 45%

Skills Inventory Pretest Evaluation

Use these answer keys to check your pretest. The evaluation charts match each problem in the pretest to a skill area. The charts will refer you to pages in this book that can provide information and practice to help you with problems you missed.

Answer Key—Part A:

Computation

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

Evaluation Chart—Part A: Computation

Problem Number	Skill Area	Text Pages
1, 3, 11, 15	Decimals	32–44, 51–52
4, 9, 12	Fractions	48–63
7, 8, 16, 22	Integers	68–72
6, 10, 13, 23, 25	Percents	82–86
5, 17, 20, 21, 24	Order of Operations	17
2, 14, 18, 19	Algebraic Operations	113–123

Answer Key—Part B:

Applied Mathematics

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

Evaluation Chart—Part B: Applied Mathematics

Problem Number	Skill Area	Text Pages
2, 4, 5, 6, 7, 19, 25	Number and Number Operations	12, 39–40, 50–52, 76–80
8, 18	Computation in Context	45, 64–65, 73, 81, 88–91, 124
1, 20, 22	Estimation	28–29, 35, 54, 146–151
13, 15, 16, 17	Measurement	145–157
14	Geometry and Spatial Sense	130–142
10, 11	Data Analysis	99–107
9	Statistics and Probability	94–98
3, 24	Patterns, Functions, Algebra	110–127
12, 21, 23	Problem Solving and Reasoning	22–29, 64–65, 81, 124