OBJECTIVE 1: PERFORM ARITHMETIC OPERATIONS ON REAL NUMBERS

Add and simplify.
1) \( \frac{7}{9} + \frac{2}{3} \)
   A) \( \frac{1}{3} \)  B) \( \frac{13}{9} \)  C) \( \frac{23}{9} \)  D) \( \frac{3}{4} \)

Multiply.
2) \( 0.29 \times 0.3 \)
   A) 0.087  B) 0.87  C) 0.00087  D) 0.0087

Simplify.
3) \( -3 + 7 - 5 \)
   A) 9  B) -5  C) -1  D) 1

Divide.
4) \( -\frac{2}{3} \div \frac{7}{9} \)
   A) \( -\frac{14}{27} \)  B) \( \frac{7}{6} \)  C) \( \frac{6}{7} \)  D) \( -\frac{6}{7} \)

Subtract.
5) \( -2.7 - 9.8 \)
   A) 7.1  B) 12.5  C) -12.5  D) -7.1

OBJECTIVE 2: SIMPLIFY EXPRESSIONS USING ORDER OF OPERATIONS

Simplify.
6) \( -11 + 80 \div (-8) \)
   A) 21  B) 9  C) -9  D) -21

Evaluate the expression for the given replacement values.
7) \( x^2 - 3y \) for \( x = 4 \) and \( y = -3 \)
   A) 7  B) -1  C) 17  D) 25
Simplify the expression.
8) 4x + 7(x - 3) + 5
   A) 11x - 16   B) -3x - 16   C) 11x + 26   D) 11x - 26

Multiply.
9) (3x^5)(7x^3)
   A) 21x^8   B) 21x^{15}   C) 10x^8   D) 10x^{15}

Simplify. Write the answer with positive exponents.
10) \( \frac{t^4}{t^6} \)
    A) t^{-6}   B) \( \frac{t^4}{t^2} \)   C) \( \frac{1}{t^2} \)   D) t^2

OBJECTIVE 3: CONVERT BETWEEN DECIMAL, FRACTION, AND PERCENT FORMS

Write the percent as a fraction or mixed number in simplest form.
11) 16%
    A) \( \frac{2}{25} \)   B) \( \frac{4}{25} \)   C) 1\( \frac{3}{5} \)   D) \( \frac{8}{25} \)

Write the fraction or mixed number as a percent.
12) \( \frac{3}{5} \)
    A) 60%   B) 1\( \frac{2}{3} \)%   C) 6%   D) 16\( \frac{2}{3} \)%

Write the decimal as a percent.
13) 0.8233
    A) 8233%   B) 8.233%   C) 0.8233%   D) 82.33%

OBJECTIVE 4: SOLVE LINEAR EQUATIONS

Solve the equation.
14) 57 = 6x - 3
    A) 54   B) 58   C) 10   D) 12

Solve.
15) x + 1.8 = 18
    A) 19.8   B) 15.7   C) 19.3   D) 16.2
Solve.

16) $9x + 18 = 3x - 24$
   \[A) 4 \quad B) 7 \quad C) -4 \quad D) -7\]

17) $2(2t - 6) - 1 = 23$
   \[A) 10 \quad B) 9 \quad C) 11 \quad D) 8\]

Solve.

18) $\frac{4}{3}x = -8$
   \[A) -8 \quad B) 6 \quad C) -\frac{32}{3} \quad D) -6\]

OBJECTIVE 5: PLOT POINTS IN THE CARTESIAN COORDINATE SYSTEM

Give the ordered pairs for the points labeled on the graph.

19) \[A) A(4, 5); B(0, -4) \quad B) A(4, 5); B(0, 4) \quad C) A(-4, 5); B(0, 4) \quad D) A(4, -5); B(1, -4)\]
OBJECTIVE 6: INTERPRET STATISTICAL GRAPHS

The circle graph shows the results of the student council presidential election. The complete circular area represents 100% of the votes.

20) Student Council President

The circle graph shows what percent of the vote each person received.

Find the ratio of Matt's votes to Jim's votes.

A) $\frac{7}{10}$  B) $\frac{10}{7}$  C) $\frac{7}{17}$  D) $\frac{7}{50}$

The bar graph shows the number of tickets sold each week by the garden club for their annual flower show.

21) How many more tickets were sold during week 1 than week 5?
A) 6 tickets  B) 86 tickets  C) 11 tickets  D) 16 tickets
Use this graph to answer each question.

Big "D" Sales
1989-1990

22) What was the difference between the highest and lowest monthly sales in 1989?  
A) $8000  
B) $4000  
C) $6000  
D) $2000

OBJECTIVE 7: APPLY THE BASIC CONCEPTS OF PLANE GEOMETRY

Find the perimeter of the figure. \( P = 2L + 2W \)

23) Rectangle

\[
\begin{array}{c}
\text{3 mi} \\
\text{12 mi}
\end{array}
\]

A) 18 mi  
B) 15 mi  
C) 12 mi  
D) 30 mi

Find the area of the geometric figure. \( A = \pi r^2 \)

24)  

\[
\begin{array}{c}
d = 4 \text{ m}
\end{array}
\]

Use 3.14 for \( \pi \). Round to the nearest hundredth, if necessary.  
A) 12.56 sq m  
B) 50.24 sq m  
C) 25.12 sq m  
D) 24.12 sq m

Find the unknown length in the right triangle.

25)  

\[
\begin{array}{c}
6 \text{ ft} \\
10 \text{ ft}
\end{array}
\]

A) 7 ft  
B) 10 ft  
C) 9 ft  
D) 8 ft
Find the measure of the indicated angle. Figure is not drawn to scale.

26)

Find the measure of $\angle x$.

A) $119^\circ$  B) $64^\circ$  C) $154^\circ$  D) $59^\circ$

**OBJECTIVE 8: SOLVE PROPORTION PROBLEMS**

Solve.

27) $\frac{1}{2} = \frac{x}{9}$

A) $\frac{1}{18}$  B) 18  C) $4\frac{1}{2}$  D) 9

Solve.

28) $\frac{x}{33} = \frac{2}{11}$

A) $181\frac{1}{2}$  B) $\frac{2}{3}$  C) 6  D) 8

**OBJECTIVE 9: SOLVE PERCENT PROBLEMS**

Solve the problem.

29) What is 45% of 500?

A) 22.5  B) 225  C) 2250  D) 2.25

Find the percent.

30) What percent of 33 is 11?

A) 200%  B) 66%  C) $132\frac{1}{3}\%$  D) $33\frac{1}{3}\%$

**OBJECTIVE 10: SOLVE APPLICATION PROBLEMS**

Solve.

31) In retailing, the retail price $P$ of an item can be computed using the equation $P = C + M$, where $C$ is the wholesale cost of the item and $M$ is the amount of markup. A retailer sells a game for $35. If his wholesale cost for the game was $21, what was his markup?

A) $56$  B) $14$  C) $15$  D) $13$
Find the unit price.

32) $4.55 for 7 pears
A) $1.54 per pear  B) $0.65 per pear  C) $3.18 per pear  D) $4.55 per pear

Solve.

33) On an architect's blueprint, 1 inch corresponds to 6 feet. If an exterior wall is 15 feet long, find how long the blueprint measurement should be. Write answer as a mixed number if necessary.
A) 2 $\frac{1}{2}$ in.  B) 10 in.  C) 7 $\frac{1}{2}$ in.  D) 4 in.

Solve.

34) A student received the following scores on their five math tests: 80, 52, 80, 91, 52
Find the student's average test score. Round your answer to the nearest whole number if necessary.
A) 91  B) 71  C) 52  D) 70

Solve.

35) A hotel is building a fitness center measuring 220 ft \times 68 ft. The flooring to cover the space is made of a special 3-layered cushioned tile and costs $17.00 per square foot. How much will it cost for the new flooring?
A) $9792  B) $305  C) $254,320  D) $14,960
1) B
2) A
3) C
4) D
5) C
6) D
7) D
8) A
9) A
10) C
11) B
12) A
13) D
14) C
15) D
16) D
17) B
18) D
19) A
20) A
21) A
22) A
23) D
24) A
25) D
26) B
27) C
28) C
29) B
30) D
31) B
32) B
33) A
34) B
35) C