MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Insert <, >, or = to make the statement true.

1) -9 _____ -4
   A) >       B) <       C) =       1)

2) 79 _____ -53
   A) =       B) >       C) <       2)

Write the sentence as a mathematical statement.

3) Fifteen is greater than three.
   A) 15 =3  B) 15 ≥3  C) 15 <3  D) 15 >3
   3)

4) Negative thirty-five is less than negative twelve.
   A) -35 > -12  B) -35 ≤ -12  C) -35 <12  D) -35 ≤ -12
   4)

Use a commutative property to complete the statement.

5) 7 +x =
   A) 7 - x  B) x - 7  C) x +7  D) -x - 7
   5)

Use an associative property to complete the statement.

6) (7x +9y) +7z =
   A) 7x +(9y +7z)  B) 7x +9y +7z  C) (9y +7x) +7z  D) (7x +9y +7z)
   6)

Use the commutative and associative properties to simplify the expression.

7) -6 +(2x - 6)
   A) -12x - 6  B) 24x  C) -12 +2x  D) 36 +2x
   7)

Use the distributive property to rewrite the algebraic expression without parentheses. Then simplify the result, if possible.

8) -6(x +y)
   A) -6x - 6y  B) -6xy  C) -6x +6y  D) -6x +y
   8)

9) 5(x +9)
   A) 5x +45  B) 5x +9  C) 5x +14  D) x +45
   9)

10) -(a - 7s)
    A) -a +7s  B) a - 7s  C) a +7s  D) -a - 7s
    10)

Use the distributive property to write the sum as a product.

11) 12 · 1 +12 · z
    A) 12(1 +z)  B) (12z)  C) 13(z)  D) (12 +12z)
    11)
Name the property illustrated by the statement.
12) \((5 + 4) + 4 = (4 + 5) + 4\)
   A) additive inverse property    B) distributive property
   C) associative property of addition  D) commutative property of addition
   12) ______

13) \(6 + 9 = 9 + 6\)
   A) commutative property of addition    B) associative property of addition
   C) identity element for addition       D) distributive property
   13) ______

14) \((4 \cdot 7) \cdot 2 = 4 \cdot (7 \cdot 2)\)
   A) associative property of multiplication    B) distributive property
   C) commutative property of multiplication   D) identity element for multiplication
   14) ______

15) \(5 \cdot 6 = 6 \cdot 5\)
   A) associative property of multiplication    B) commutative property of multiplication
   C) distributive property                      D) identity element for multiplication
   15) ______

Solve.
16) You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 10 meters and 56 meters of fencing is required to completely enclose it. What is the width of the garden?
   A) 36 m    B) 560 m    C) 18 m    D) 5.6 m
   16) ______

17) Use the formula \(C = \frac{5}{9}(F - 32)\) to write \(-31^\circ F\) as degrees Celsius.
   A) 0.6\(^\circ\) C    B) -23.8\(^\circ\) C    C) -49.2\(^\circ\) C    D) -35\(^\circ\) C
   17) ______

Substitute the given values into the formula and solve for the unknown variable.
18) \(d = rt; \ t = 9, \ d = 27\)
   A) 0.3    B) 18    C) 36    D) 3
   18) ______

19) \(P = 2L + 2W; \ P = 30, \ W = 6\)
   A) 9    B) 24    C) 12    D) 15
   19) ______

Solve the equation for the indicated variable.
20) \(d = rt\) for \(r\)
   A) \(r = \frac{t}{d}\)    B) \(r = \frac{d}{t}\)
   C) \(r = dt\)    D) \(r = d - t\)
   20) ______

21) \(A = \frac{1}{2}bh\) for \(b\)
   A) \(b = \frac{h}{2A}\)    B) \(b = \frac{Ah}{2}\)
   C) \(b = \frac{2A}{h}\)    D) \(b = \frac{A}{2h}\)
   21) ______
Solve the inequality.

22) \( x + 11 \leq 4 \)

- A) \( \{x \mid x \leq -7\} \)
- B) \( \{x \mid x \geq -7\} \)
- C) \( \{x \mid x \leq -7\} \)
- D) \( \{x \mid x \geq -7\} \)

23) \( -5x - 12 \geq 6x - 4 \)

- A) \( \{x \mid x < 8\} \)
- B) \( \{x \mid x \geq -16\} \)
- C) \( \{x \mid x > 8\} \)
- D) \( \{x \mid x \leq -16\} \)
24) \( \frac{y}{5} \geq 4 \)

A) \( \{y \mid y \geq 20\} \)

B) \( \{y \mid y > 20\} \)

C) \( \{y \mid y < 20\} \)

D) \( \{y \mid y \leq 20\} \)

25) \(-3 < \frac{y}{2}\)

A) \( \{y \mid y < -6\} \)

B) \( \{y \mid y \leq -6\} \)

C) \( \{y \mid y = -6\} \)

D) \( \{y \mid y > -6\} \)
26) \[25x - 10 > 5(4x - 6)\]

A) \( \{x \mid x < -4\} \)

B) \( \{x \mid x \geq -4\} \)

C) \( \{x \mid x \leq -4\} \)

D) \( \{x \mid x > -4\} \)

27) \[-2(5y + 12) < 12y - 18\]

A) \( \{y \mid y < 3\} \)

B) \( \{y \mid y \geq 3\} \)

C) \( \{y \mid y > 3\} \)

D) \( \{y \mid y \leq 3\} \)

Solve.

28) The area of a rectangle must be at least 85 square feet. If the length is 5 feet, find the minimum for the rectangle's width.

A) \( \frac{1}{17} \) ft  

B) \( 37 \frac{1}{2} \) ft  

C) 18 ft  

D) 17 ft

29) Three less than three times a number is less than ten. Find all such numbers.

A) \( x > -\frac{7}{3} \)  

B) \( x < \frac{19}{3} \)  

C) \( x < \frac{13}{3} \)  

D) \( x < \frac{7}{3} \)