Name_____ Date_____

Skills Test — Prerequisite Skills Test

Add or subtract.

1. $-9 + (-15)$ 2. $2 + (-3)$ 3. $6 - 9$

4. $-6 - 11$ 5. $13 + 8$ 6. $-12 - (-10)$

Multiply or divide.

7. $2(-7)$ 8. $-8 \cdot 2$ 9. $9 \div 3$

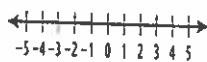10. $25 \div (-5)$ 11. $-30 \div (-6)$ 12. $-1(-7)$

Solve the problem and specify the units of measure.

13. The length of a rectangle is 6 feet and the width is 3 feet. Find the perimeter of the rectangle.

14. One side of a square measures 9 centimeters. Find the area of the square.
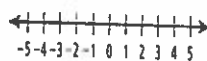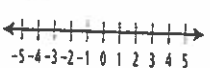
Graph the number.

15. 4
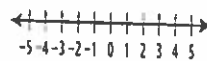
16. $|-3|$
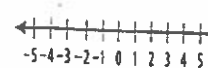
17. $-6 + |5|$
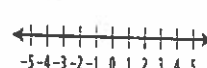
18. $1 - |-3|$
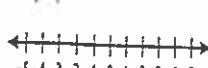
Complete the statement with <, >, or =.

19. $3 \_\_ 7$ 20. $-1 \_\_ 4$

21. $-4 \_\_ -10$ 22. $|-6| \_\_ -3$

Evaluate the expression for the given value of x.

23. $2x - 6; x = 9$ 24. $-7 + 9x; x = 3$ 25. $12x + 13; x = 5$

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. ___See left
16. ___See left
17. ___See left
18. ___See left
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____

Chapters 1–3 **Cumulative Test** (continued)

13. Which inequality is different?

    A. x is no more than 12.
    B. x is less than or equal to 12.

    C. x is at most 12.
    D. x is no less than 12.

14. Translate "seven is greater than the difference of twice a number and nine" into an inequality. Solve the inequality.

    A. $7 > 2n - 9; n < 8$
    B. $7 \geq 2(n - 9); n \leq 12.5$

    C. $2n - 9 \geq 7; n > 8$
    D. $2(n - 9) > 7; n > 12.5$

15. Solve $2t - 1 > 15$.

    A. $t > 7$
    B. $t < 7$

    C. $t > 8$
    D. $t < 8$

16. An error was made while solving the inequality $-4(2x - 3) > 5x - 14$. Choose the step where the error was made.

    A. $-8x + 12 > 5x - 14$
    B. $-13x + 12 > -14$

    C. $-13x > -26$
    D. $x > 2$

17. Which compound inequality is represented by the graph?
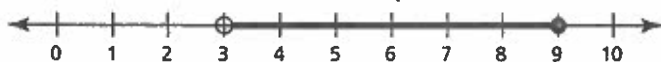
    A. $5 \leq x + 2 < 11$
    B. $10 < 2x + 4 \leq 22$

    C. $5 \leq x + 2 \leq 11$
    D. $10 \leq 2x + 4 < 22$

18. Solve $-3|2x - 5| \leq -9$.

    A. $x \geq 4$ or $x \leq 1$
    B. $x \leq 4$ and $x \geq 1$

    C. all real numbers
    D. no solution

19. Which of the following is a linear function?

    A. $y = x^2 + 4$
    B. $y = \sqrt{x} - 2$

    C. $y = \frac{1}{2}(x - 4)$
    D. $y = \frac{2}{x} + 3$

Chapters 1–3 **Cumulative Test** (continued)

24. The function $f(x) = x$ is translated 4 units left and 3 units up. Which function represents the transformation?

  A. $g(x) = (x + 4) + 3$ **B.** $g(x) = (x - 4) + 3$

  C. $g(x) = (x - 3) + 4$ **D.** $g(x) = (x + 3) - 4$

25. Which equation does not belong with the other three? Explain your reasoning.

$|y| = -8$	$-5|2 + 3y| = 15$	$-3|1 - y| = -9$	$|2x + 4| + 8 = 2$

26. Which of the following equations are equivalent?

$15 - 2x = 3x$	$x + 2 = 5$	$4(x - 2) = 3x - 5$	$\frac{1}{3}x = 9$

27. The formula for the volume of a cylinder is $V = \pi r^2 h$.

  a. Solve the formula for h.

  b. Use the formula from part (a) to find the height of the cylinder with a radius of 3 centimeters and a volume of 45π cubic centimeters.

28. You are permitted a 50-pound check bag for free on your flight to Florida. Your bag weighs 32 pounds.

  a. Write and solve an inequality that represents how much weight you can add to your bag.

  b. Can you add your 5-pound algebra book and your 6-pound biology book without going over the weight limit? Explain.

29. Place each equation into one of the four categories.

No solution	One solution	Two solutions	Infinitely many solutions

$8x + 12 = 4(2x + 3)$	$|x - 5| = 4$	$|2x - 5| + 3 = 0$	$|3x + 6| = 9$

$3(-2 - 3x) = -9x - 4$	$\frac{1}{2}(6 - x) = x$	$1 - x = 6 - 6x$	$3(x + 1) - 4 = 3x - 1$