Name _____ Class _____ Date _____

Chapter Test Form A

Chapter 1

1. Graph each number on a number line.

a. 3 **b.** -5 **c.** $\sqrt{5}$ **d.** $\frac{2}{3}$ **e.** -2.75 **f.** $-\sqrt{16}$

2. What properties of real numbers are used in each step of the following simplification?

$\frac{1}{4}(3 \cdot 4) = \frac{1}{4}(4 \cdot 3)$ **a.** _____

$= \left(\frac{1}{4} \cdot 4\right) \cdot 3$ **b.** _____

$= 1 \cdot 3$ **c.** _____

$= 3$ **d.** _____

Simplify.

3. $|-5 + 8| - 9$

4. $-3|6 + (-11)|$

Evaluate each expression for the given value of the variable.

5. $-a^2 + 4a - 17; a = 5$

6. $\frac{6(s - 2) - 4(s + 1)}{3s + 1}; s = 3$

Simplify by combining like terms.

7. $4m - 7n - 2m + 6n$

8. $\frac{1}{2}(x^2 + 6y) - (4y - x^2)$

9. The expression $19.95 + 0.20x$ models the daily cost of renting a car. In the expression, x represents the number of miles the car is driven. Find the cost of renting a car for a day when the car is driven 50 miles.

Solve each equation.

10. $4w - 17 = 3w - 11$

11. $3r + 3.7 = 5r - 2.5$

12. $3(5t + 2) = 36$

13. $2(5d + 13) - 14 = 8$

14. $7(a + 5) - 12 = 3(a + 2)$

15. $3\left(x - \frac{1}{2}\right) = 5\left(x + \frac{7}{2}\right) + 4x - 1$

Solve each equation for x. State any restrictions on the variables.

16. $tx - ux = 3t$

17. $\frac{x - 3}{6} + 3 = a$

Name _____ Class _____ Date _____

Chapter Test (continued) Form A

Chapter 1

Solve each formula for the indicated variable.

18. $R = \frac{1}{2}(r_1 + r_2)$, for r_2

19. $P = 2\ell + 2w$, for ℓ

Write an equation and solve each problem.

20. The length of a rectangle is 5 cm greater than its width. The perimeter is 106 cm. Find the dimensions of the rectangle.

21. Two buses leave Dallas at the same time and travel in opposite directions. One bus averages 58 mi/h, and the other bus averages 52 mi/h. When will they be 363 mi apart?

Solve each inequality. Graph the solutions.

22. $3m + 7 \geq 4$

23. $5 - 6x < 7$

24. $4a > 3(a + 1) - \left(7 - \frac{3}{2}a\right)$

25. $2y + 3 < 3y - 5$

Solve each compound inequality. Graph the solutions.

26. $-1 < 5 - 4x < 11$

27. $3x - 1 \leq 5$ or $2x - 4 \geq x$

28. $-3t \leq 12$ and $-2t > -6$

29. $-5 < 2x + 5 < 3$

Solve each equation. Check for extraneous solutions.

30. $|2x + 3| = 5$

31. $|x + 6| = 2x$

Solve each inequality. Graph the solutions.

32. $|3x + 2| \leq 5$

33. $5|3x - 7| + 4 > 29$

34. The temperature T of a refrigerator is at least 35°F and at most 41°F. Write an absolute value inequality and a compound inequality for the temperature of the refrigerator.

Suppose a number is chosen at random from the sample space {5, 7, 9, 11, 13, 15, 17}. Find each probability.

35. P(less than 13)

36. P(odd)

37. A basketball player made 27 free throws in her last 45 tries. What is the experimental probability that she will make her next free throw?