Intro to Alg 2 **Unit 1 Test Review**

Learning Target

1.1 I can identify the properties of real numbers.

Name the property of real numbers illustrated by each equation.

1.
$$(2+x)+3=2+(x+3)$$

2.
$$8 + 0 = 8$$

$$3. 16(3t+4v) = 48t+64v$$

4.
$$\sqrt{2} \cdot 3 = 3 \cdot \sqrt{2}$$

Lists the sets of numbers to which each number belongs.

6.
$$\sqrt{52}$$

Learning Target

1.2 I can use properties of real numbers and the correct order of operations to simplify expressions and functions.

Simplify each expression.

10.
$$\frac{3(a-b)}{9} + \frac{4}{9}b$$

11.
$$t + \frac{t^2}{2} + t^2 + t$$

12.
$$2(m-n^2)-6(n^2+3m)$$

13.
$$x(x-y) + y(y-x)$$

Learning Target

1.3 I can solve single-step and multi-step equations in one variable.

Solve each equation.

14.
$$7y + 5 = 6y + 11$$

15.
$$\frac{1}{4}x + 3 = \frac{1}{3}x - 4$$

16.
$$t-3\left(t+\frac{4}{3}\right)=2t+3$$

17.
$$0.5(c+2.8) - c = 0.6c + 0.3$$

Solve the equation for the indicated variable. State any restrictions on the variable.

18.
$$\frac{1}{3}(x+5) = k$$
, for x

19.
$$A = \frac{1}{2} (b_1 + b_2)h$$
, for b_2

20.
$$A = \frac{1}{2} (b_1 + b_2)h$$
, for h

21.
$$P = 2(l + w)$$
, for w

22.
$$\frac{4}{3}x - \frac{5}{6}y = 2$$
, for y

Learning Target

1.4 I can create equations in one variable from verbal expressions and use them to solve the problem.

Write an equation and solve the problem.

- 23. The cost of renting a car is 19.95 per day and 20 cents per mile. Find the cost of renting a car for a day when the car is driven 50 miles.
- **24.** 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?
- 25. The length of a rectangle is 5 cm greater than its width. The perimeter is 106 cm. Find the dimensions of the rectangle.
- 26. The sides of a triangle are in the ratio of 2:8:4. If the perimeter is 27 in, what is the length of each side of the triangle?
- 27. Find two consecutive odd integers whose sum is 96.
- 28. The measure of the complement of an angle is 9° more than twice the angle. Find the measures of the angles.
- 29. A car salesman makes \$350 per week, plus 8% commission from every car he sells. If he sells 3 cars at \$22,000 each, how much did he earn? The next week, he earns \$1500. How much (in dollars) did he sell?

Learning Target

1.5 I can solve single-step and multi-step inequalities in one variable.

Solve each inequality. Graph the solutions.

30.
$$2c + 5 \le -1$$

31.
$$4 - 3x > 10$$

Learning Target

1.6 I can solve compound inequalities containing "and" or "or".

Solve each compound inequality. Graph the solutions.

32.
$$2x - 3 < -5 \text{ or } 3x - 10 > x$$

33.
$$-3 < 2x - 3 < 5$$

Learning Target

1.7 I can solve linear inequalities containing absolute value.

Solve each equation. Check for extraneous solutions.

34.
$$|2x-9|=1$$

35.
$$|2y + 5| = 3y$$

Solve each inequality. Graph the solutions.

36.
$$|4z-3| \ge 5$$

37.
$$6 | 5x - 2 | -1 < 17$$

38. 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.