Solving One-Variable Equations and Inequalities
Independent Practice – Answer Key

Use the situation below to answer questions 1 – 3.

Two angles are complementary. The measure of one angle is 21°.

1. Write an equation that could be used to solve for x, the measure of the second angle.
    $x + 21 = 90$

2. Solve the equation for x.
    $x = 69$

3. Identify the location of the solution on the number line below.

Use the situation below to answer questions 4 – 6.

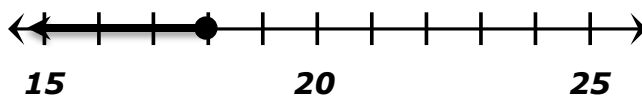The perimeter of a rectangle is no more than 60 inches. The length of the rectangle is 12 inches.

4. Write an inequality that could be used to solve for x, the width of the rectangle.
    $2x + 24 \leq 60$

5. Solve the inequality for x.
    $x \leq 18$

6. Represent the solution on the number line below.

In questions 7 – 10, solve the equation.

7. $5x = 65.5$
   x = 13.1

9. $x - 4.5 = 26.3$
   x = 30.8

8. $\frac{18}{x} = 3$
   x = 6

10. $6x = -84$
    x = −14

In questions 11 – 13, solve the inequality.

11. $4x < 91$
    x < 22.75

13. $-8x > 328$
    x < -41

12. $x - 6 \geq 103.8$
    x ≥ 109.8

In questions 14 – 15, determine whether the given numbers are solutions of the equation or inequality. Explain how you know.

14. Is 4 a solution to the equation $6.1x = 19$?
    No. 6.1(4) = 24.4, which is not equal to 19.

15. Are 8, 15.1, and 21 solutions to the inequality $x - 8.1 \leq 11$?
    8 and 15.1 are solutions.
    8 − 8.1 = 0.1, which is less than 11.
    15.1 − 8.1 = 7, which is less than 11.

    21 is not a solution.
    21 − 8.1 = 12.9, which is not less than or equal to 11.

For questions 16 – 17 write a real-world problem that you could use the given equation to solve.

16. $5x = 50$

    Sample Answer:

    Maria plans to save $5 each week. If she does so, in how any weeks will have have $50?

17. 5x < 75

    Sample Answer:

    Robert must spend less than $75. He is buying socks that cost $5 a pair. How many pairs of socks can he buy?