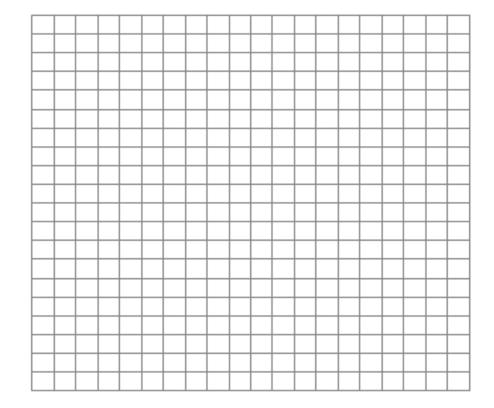
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Learning Goal 7.1 Solve systems of linear equations graphically.

**Example** Wayne received and sent 60 text messages on his cell phone this weekend. He sent 10 more text messages than he received.

a. Create a system of linear equations to model this situation.

b. Graph the linear system to solve the problem: how many text messages did Wayne send and receive?



c. Verify your solution.

## **Terminology**

a. Point of Intersection

b. System of Linear Equations

c. Satisfies an equation

d. Solution to a System of Linear Equations

**Example** For which of the following systems is the point (-1,1) a solution?

a. 
$$5x + 6y = 1$$
  
 $6x + 2y = -3$ 

$$5x + 6y = 1$$
 b.  $3x + 4y = 1$  c.  $3x - 4y = -6$  d.  $2x + 3y = 1$ 

$$3x + 4y = 1$$
 c.  $3x - 4y = -6$   
 $5x - 3y = -8$   $3x + 3y = 1$ 

d. 
$$2x + 3$$

$$4x + 6y = 2$$

**Example** Solve the following systems graphically. Check your solution.

a. 
$$x + y = 5$$
  
 $3x + v = 3$ 

$$3x + y = 3$$

 $y = -\frac{3}{2}x + 8$ b.

$$2x + 4y = 16$$

