

## Module 7 Lesson 2:

### Are You Ready? Possible Solutions

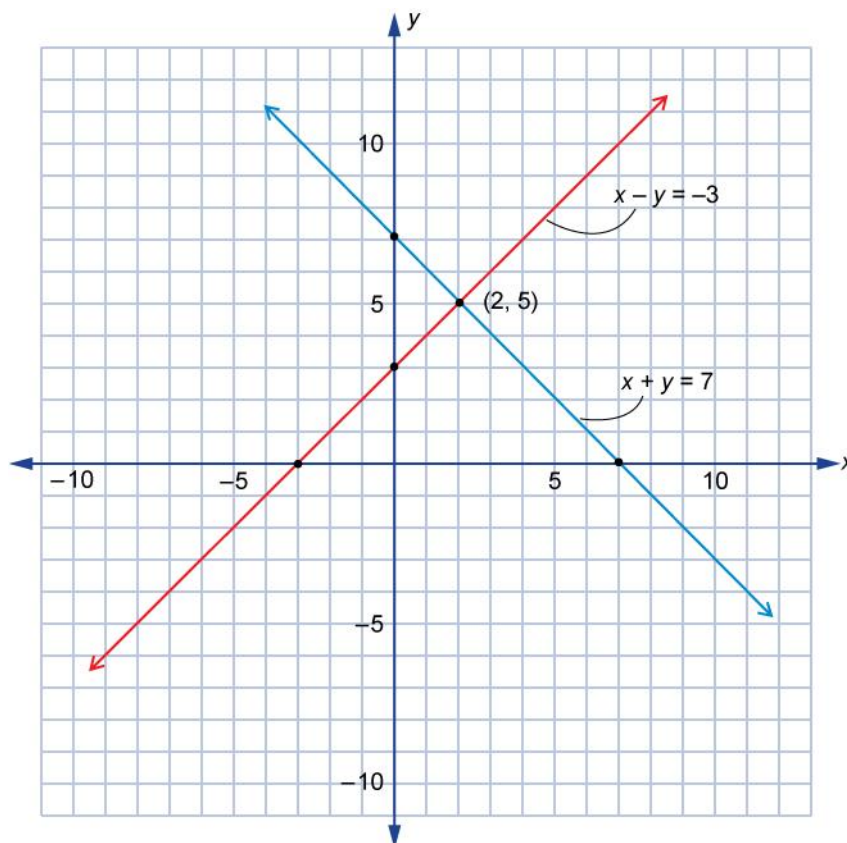
1. a. Let  $E$  be Kevin's earnings in dollars and  $T$  be the time worked in hours. Then the equation would be as follows:

$$E = 10T$$

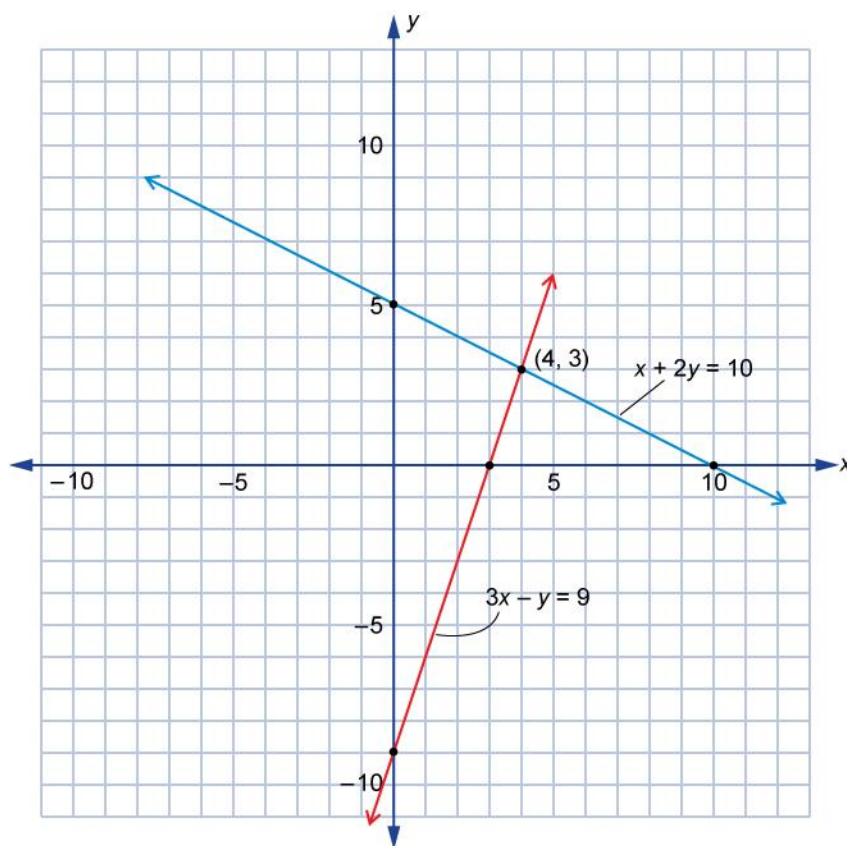
- b. If  $y$  represents the cost of renting in dollars and  $x$  represents the number of canoes, the equation would be as follows:

$$y = 200 + 50x$$

2. a. The intersection point is  $(2, 5)$  and is the solution.



b. The intersection point is (4, 3) and is the solution.



3. B

To test whether (1, -1) is a solution for a system, the student checks whether (1, -1) is a solution for both equations of the system.

A.

| LS               | RS       | LS              | RS       |
|------------------|----------|-----------------|----------|
| $2x + 5y$        | 3        | $x - 3y$        | 2        |
| $= 2(1) + 5(-1)$ |          | $= (1) - 3(-1)$ |          |
| $= 2 - 5$        |          | $= 1 + 4$       |          |
| $= -3$           |          | $= 5$           |          |
| -3               | $\neq$ 3 | 5               | $\neq$ 2 |

The point (1, -1) is not a solution for the system since it satisfies neither of the two equations of the system.

B.

| LS               | RS  |
|------------------|-----|
| $2x - 3y$        | 5   |
| $= 2(1) - 3(-1)$ |     |
| $= 2 + 3$        |     |
| $= 5$            |     |
| 5                | = 5 |

| LS               | RS  |
|------------------|-----|
| $3x + 2y$        | 1   |
| $= 3(1) + 2(-1)$ |     |
| $= 3 - 2$        |     |
| $= 1$            |     |
| 1                | = 1 |

The point  $(1, -1)$  is the solution for the system since the point satisfies both equations of the system.

C.

| LS              | RS  |
|-----------------|-----|
| $x + 2y$        | -1  |
| $= (1) + 2(-1)$ |     |
| $= 1 - 2$       |     |
| $= -1$          |     |
| 5               | = 5 |

| LS               | RS       |
|------------------|----------|
| $5x - 5y$        | 0        |
| $= 5(1) - 5(-1)$ |          |
| $= 5 + 5$        |          |
| $= 10$           |          |
| 10               | $\neq$ 1 |

The point  $(1, -1)$  is not a solution for the system since it satisfies only one of the equations.

4. a. The  $t$ -intercept  $(0, 100)$  represents the conditions at the beginning of the drive along the route.
- b. The  $D$ -intercept  $(2, 0)$  represents the conditions at the end of the drive along the route.
- c. The magnitude (or absolute value) of the slope represents the speed of the moped.
- d. In 1 h, the moped travels 50 km. So, in 1.5 h it will travel 1.5 times as far.

$$50 \text{ km} \times 1.5 = 75 \text{ km}$$

So, after 1.5 h, the moped will still need to travel  $100 \text{ km} - 75 \text{ km} = 25 \text{ km}$ .