

1.

 L : length, w : width

$$62 = 2L + 2w$$

$$L = w + 7$$

$$L - w = 7$$

$$(2L + 2w = 62)\left(\frac{1}{2}\right) = \underline{L + w = 31}$$

$$2L = 38$$

$$L = 19$$

$$w = 12$$

The dimensions of the rectangle are 19 in by 12 in.

2.

 t : tens, u : units

$$t + u = 12$$

$$t + 10u = 12u$$

$$t - 2u = 0$$

$$(-1)(t - 2u = 0) = -t + 2u = 0$$

$$\underline{+ t + u = 12}$$

$$3u = 12$$

$$u = 4$$

$$t = 8$$

The number is 84.

3.

 c : cost, p : people

$$c = 8p + 90$$

$$c = 6p + 110$$

$$8p + 90 = 6p + 110$$

$$2p = 20$$

$$p = 10$$

$$c = 8(10) + 90$$

$$c = \$170$$

If 10 people attend the party at either location the cost will be \$170.

4.

$$c = 8(20) + 90$$

$$c = 250$$

$$c = 6(20) + 110$$

$$c = 230$$

The less-expensive party would be at The Roller Skate.

5.

$$\begin{array}{r} x + y = 43 \\ x - y = 3 \\ \hline x + y = 43 \\ + x - y = 3 \\ \hline 2x = 46 \\ x = 23 \end{array}$$

$$(23) - y = 3$$

$$y = 20$$

The two numbers are 20 and 23.

6.

The product of 23 and 20 is 460.

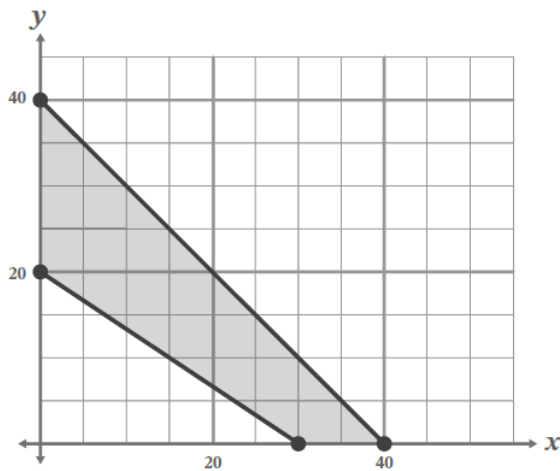
7.

c : cashier, b : babysitting

$$10c + 15b \geq 300$$

$$c + b \leq 40$$

8.



9.

The shaded region represents the possible combinations of hours Melissa can work, at both of her jobs, that will not exceed 40 hours but will earn her at least \$300.

10.

g : general admission, v : VIP tickets

$$v \leq 300$$

$$g + v \leq 800$$