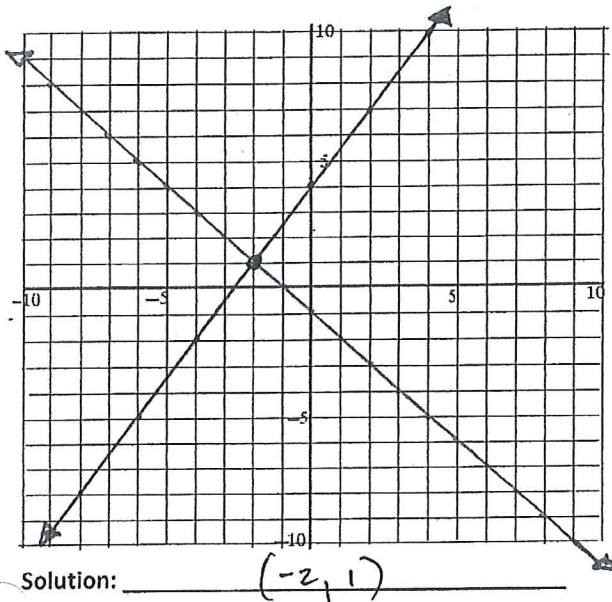
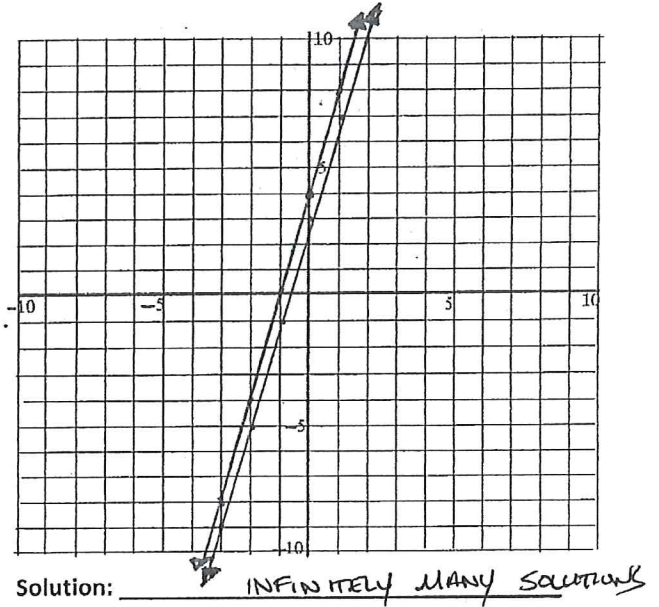


Solve each system by graphing.

1.) $\begin{cases} 4y - 6x = 16 \\ 1 = -x - y \end{cases} \rightarrow \begin{cases} y = \frac{3}{2}x + 4 \\ y = -x - 1 \end{cases}$



2.) $\begin{cases} -y + 3 + 4x = 0 \\ 8x = -8 + 2y \end{cases} \rightarrow \begin{cases} y = 4x + 3 \\ y = 4x + 4 \end{cases}$



Solve each system using the substitution and/or elimination method.

3.) $\begin{cases} -2x + 4y = 4 & (2) \\ 4x - 3y = -18 \end{cases} \rightarrow \begin{cases} -4x + 8y = 8 \\ 4x - 3y = -18 \end{cases}$

$$\begin{aligned} & \underline{5y = -10} \\ & \boxed{y = -2} \end{aligned}$$

$(-6, -2)$

$$\begin{aligned} -2x + 4y &= 4 \\ -2x + 4(-2) &= 4 \\ -2x - 8 &= 4 \\ -2x &= 12 \\ \boxed{x} &= -6 \end{aligned}$$

4.) $\begin{cases} -5x + 6y = -8 \\ x - 4y = 24 \end{cases} \rightarrow \begin{cases} -5x + 6y = -8 \\ 5x - 20y = 120 \end{cases}$

$$\begin{aligned} & \underline{-14y = 112} \\ & \boxed{y = -8} \end{aligned}$$

$(-8, -8)$

$$\begin{aligned} x - 4y &= 24 \\ x - 4(-8) &= 24 \\ x + 32 &= 24 \\ \boxed{x} &= -8 \end{aligned}$$

5.) $\begin{cases} -6x + 4y = 4 \\ 3x - y = -4 \end{cases} \rightarrow \begin{cases} -6x + 4y = 4 \\ 12x - 4y = -16 \end{cases}$

$$\begin{aligned} & \underline{6x = -12} \\ & \boxed{x = -2} \end{aligned}$$

$(-2, -2)$

$$\begin{aligned} -6x + 4y &= 4 \\ -6(-2) + 4y &= 4 \\ 12 + 4y &= 4 \\ 4y &= -8 \\ \boxed{y} &= -2 \end{aligned}$$

6.) $\begin{cases} -5x + 6y = 5 & (c) \\ -3x - 5y = 3 & (d) \end{cases} \rightarrow \begin{cases} -25x + 30y = 25 \\ -18x - 30y = 18 \end{cases}$

$$\begin{aligned} & \underline{-43x = 43} \\ & \boxed{x = -1} \end{aligned}$$

$$\begin{aligned} -5x + 6y &= 5 \\ -5(-1) + 6y &= 5 \\ 5 + 6y &= 5 \\ 6y &= 0 \\ \boxed{y} &= 0 \end{aligned}$$

- 7.) Molly and Ryan are selling pies for a school fundraiser. Customers can buy apple pies and lemon meringue pies. Molly sold 11 apple pies and 11 lemon meringue pies for a total of \$242. Ryan sold 4 apple pies and 11 lemon meringue pies for a total of \$193. What is the cost of one apple pie and one lemon meringue pie?

$a = \$$ of apple pie
 $m = \$$ of meringue pies

$$\begin{array}{r} 11a + 11m = 242 \\ - (4a + 11m = 193) \\ \hline 7a = 49 \\ a = 7 \\ 11(7) + 11m = 242 \\ m = 15 \end{array}$$

\$7 for apple pies
\$15 for meringue pies

- 8.) Mandy and Kellie each improved their school cred by purchasing new school supplies from the same store. Mandy spent \$83 on 14 high-tech mechanical pencils and 11 boxes of vibrant colored pencils. Kellie spent \$65 on 5 high-tech mechanical pencils and 11 boxes of vibrant colored pencils. Find the cost of each item.

$M = \$$ of mechanical pencils
 $C = \$$ of colored pencils

$$\begin{array}{r} 14p + 11c = 83 \\ - (5p + 11c = 65) \\ \hline 9p = 18 \\ p = 2 \\ 14(2) + 11c = 83 \\ c = 5 \end{array}$$

\$2 for mechanical pencils
\$5 for colored pencils

- 9.) A large pizza at Palanzio's Pizzeria costs \$6.80 plus \$0.90 for each topping. The cost of a large cheese pizza at Guido's Pizza is \$7.30 plus \$0.65 for each topping. How many toppings need to be added to a large cheese pizza from Palanzio's Pizzeria and Guido's Pizza in order for the pizzas to cost the same, not including tax?

$C = \text{total}$
 $t = \#$ of toppings

$$\begin{array}{r} C = 0.90t + 6.80 \\ C = 0.65t + 7.30 \end{array} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} 0.90t + 6.80 = 0.65t + 7.30 \\ t = 2 \end{array}$$

2 toppings

- 10.) A school principal and the local business community have devised an innovative plan to motivate better school attendance and achievement. They plan to give gift certificates to students who score high in each category. Students with high attendance will be awarded \$20 gift certificates, and those with good grades will receive \$25 gift certificates. The total budget for this plan is \$1500, and the planning committee would like to award 65 certificates. Determine the number of each type of certificate to be printed.

$$\begin{array}{r} 20h + 25g = 1500 \\ - 20(h + g = 65) \\ \hline g = 40 \\ h + 40 = 65 \\ h = 25 \end{array}$$

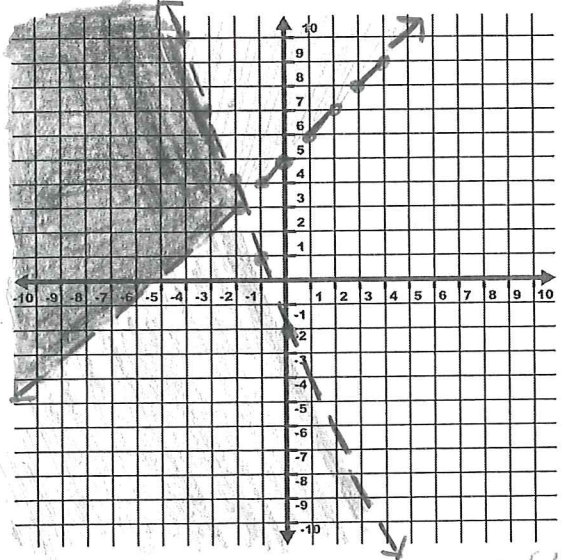
40 of the \$25 gift cards for high attendance
25 of the \$20 gift cards for good grades

11.) $x - y < -5$
 $3x + y < -2$

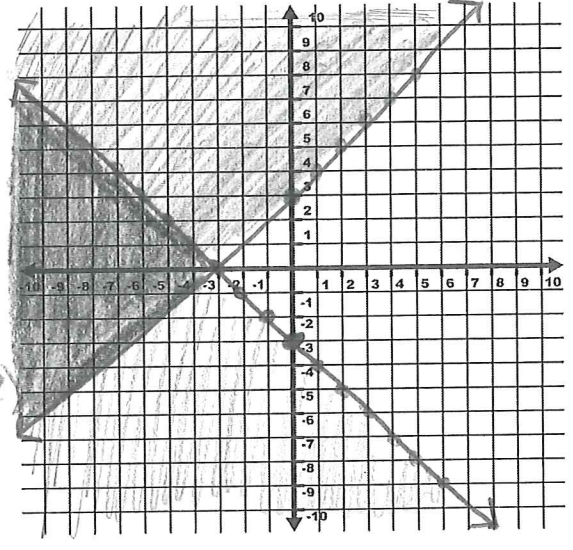
Flip
 $-y < -x - 5$
 $y > x + 5$
 $y < -3x - 2$

12.) $2x + 2y \leq -6$
 $3y \geq 3x + 9$

$2y \leq -2x - 6$
 $y \leq -x - 3$
 $y \geq x + 3$



dashed (2,7)



solid (4,3)

13.) $10 > 4 - 6x$
 $6 > -6x$
 $-1 > x$
 $x < -1$

14.) $4 \cdot \frac{-2x+1}{4} \geq 2,4$
 $-2x+1 \geq 8$
 $-2x \geq 7$
 $x \leq -\frac{7}{2}$

15.) $-14x + 2 \geq -12x + 8$
 $-2x \geq 6$
 $x \leq -3$

