

Warm-up

1) Find the y -value of the solution. You may use whatever method you prefer (substitution or graphing)

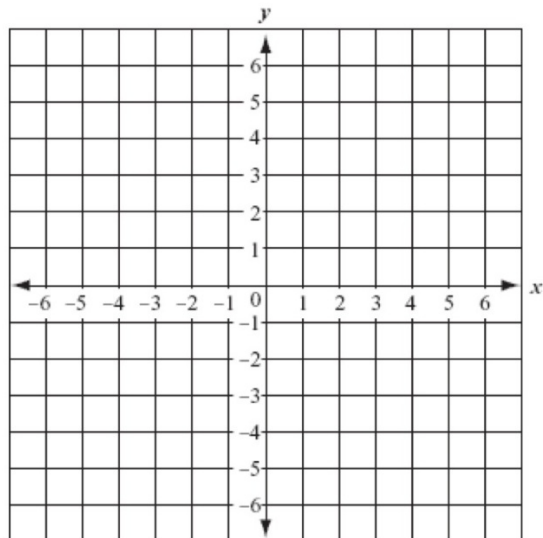
$$y = -2x + 2$$

$$2x + 3y = -6$$

2) Find the solution.

$$x - y = 3$$

$$2x + y = 0$$



Go Over HW

$$\textcircled{1} \quad 4y - x = 9$$

$$3y + 2x = 4$$

Solve. $\textcircled{4y - x = 9}$

$$-x = -4y + 9$$

$$\frac{-x}{-1} = \frac{-4y + 9}{-1}$$

$$x = \textcircled{4y - 9}$$

Sub. $3y + 2x = 4$

$$3y + 2(4y - 9) = 4$$

Solve. $3y + 8y - 18 = 4$

$$11y - 18 = 4$$

$$11y - 18 + 18 = 4 + 18$$

$$\frac{11y}{11} = \frac{22}{11}$$

$$\boxed{y = 2}$$

Sub. $x = 4y - 9$

$$x = 4(2) - 9$$

$$x = 8 - 9$$

$$\boxed{x = -1}$$

Solution: $(-1, 2)$

2. Jonas needs a cell phone. He has a choice between two companies with the following monthly billing policies. Each company's monthly billing policy has an initial operating fee and charge per minute.



	Operating Fee	Charge per Minute
Terri's Telephone	29.95	0.14
Carrie's Connection	4.95	0.39

- Define your variables.
- Write a system of equations to model the above situation.
- At how many minutes is the monthly cost the same? What is the equal monthly cost of the two plans? Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation.

② $x = \#$ of minutes
 $y = \text{total cost}$

$$y = .14x + 29.95$$
$$y = .39x + 4.95$$

$$y = .14(100) + 29.95 = \$43.95 \text{ is the equal monthly cost}$$

$$.14x + 29.95 = .39x + 4.95$$

$$.14x - .39x + 29.95 = .39x - .39x + 4.95$$

$$-.25x + 29.95 = 4.95$$

$$-.25x + 29.95 - 29.95 = 4.95 - 29.95$$

$$\begin{array}{r|l} -.25x & 25 \\ -.25 & -.25 \end{array}$$

$$x = 100$$

At 100 minutes the monthly cost is the same.

3. Movies Are Us has two video rental plans. The Regular video rental plan charges \$ 3.25 for each video rental. The Preferred video rental plan has an \$ 8.75 membership fee and charges \$ 2 for each video rental.
- Define your variables.
 - Write a system of equations to model the above situation.
 - How many video rentals give the two plans the same cost? What is the equal cost? Use mathematics to explain how you determined your answer. Use words, symbols or both in your explanation.

(3) Regular Video rental plan } Preferred Video Rental
\$3.25 per video } \$8.75 mem. fee + \$2 per video

X = # of videos

Y = total cost

$$y = 3.25x$$

$$y = 2x + 8.75$$

$$y = 3.25(7)$$

$$y = \$22.75 \text{ is the equal cost}$$

$$3.25x = 2x + 8.75$$

$$3.25x - 2x = 2x - 2x + 8.75$$

$$1.25x = 8.75$$

$$\frac{1.25}{1.25} = \frac{8.75}{1.25}$$

$$x = 7$$

After renting 7 videos, the two plans have the same cost.

$$\textcircled{4} \quad 24a - 22 = -4(1 - 6a)$$

$$24a - 22 = -4 + 24a$$

$$24a - 24a - 22 = -4 + 24a - 24a$$

$$-22 \neq -4$$

No solution

$$\textcircled{5} \quad -5(1-5x) + 5(-8x-2) = -4x-8x$$

$$\boxed{-5} + 25x - 40x \boxed{-10} = -4x - 8x$$

$$\sqrt{-15x - 15} = -12x \sqrt{}$$

$$-15x + 12x - 15 = -12x + 12x$$

$$-3x - 15 = 0$$

$$-3x - 15 + 15 = 0 + 15$$

$$\underline{-3x} = \underline{15}$$

$$\underline{-3} \quad \underline{-3}$$

$$\boxed{x = -5}$$

HW is to complete the study guide