Warm Up

Rewrite in Slope-Intercept form (y =)

$$4x + 6y + 12 = 0$$

$-6y \quad -6y$

$-1\left[+4x+12=-6y\right]-1$

$\frac{6y}{6} = \frac{-4x}{6} - \frac{12}{6}$

$y = -\frac{2}{3}x - 2$

This is solving for y. Eq is in the form y = ...

Write this equation so it is in "x = " form

- Isolate x
- solving for x

$$4x + 6y + 12 = 0$$

$-6y \quad -6y$

$4x + 12 - 6y$

$-12 \quad -12$

$\frac{4x}{4} = \frac{-6y}{4} - \frac{12}{4}$

$x = -\frac{3}{2}y - 3$

Answers to Friday's Classwork

Finding the common solution.

B.

1. $\begin{cases} y = 1.5x - 0.4 \\ y = 0.3x + 5 \end{cases}$

$1.5x - 0.4 = 0.3x + 5$

$(45, 6.35)$

2. $\begin{cases} x + y = 3 \\ x - y = -5 \end{cases}$

$y = 3 - x$

$y = x + 5$

(-1, 4)

$3 - x = x + 5$

$+x \quad +x$

$3 = 2x + 5$

$-5 \quad -5$

$-2 = 2x$

$\frac{-2}{2} = \frac{2x}{2}$ $x = -1$

$-1 + y = 3$

$+1 \quad +1$

$y = 4$

3. $\begin{cases} 3x - y = 30 \\ x + y = 14 \end{cases}$

(11, 3)

$\begin{cases} y = 3x - 30 \\ y = 14 - x \end{cases}$

4. $\begin{cases} x + 6y = 15 \\ -x + 4y = 5 \end{cases}$

(3, 2)

$y = -\frac{1}{6}x + \frac{5}{3}$

$y = \frac{1}{4}x + \frac{5}{4}$

$-\frac{1}{6}x + \frac{5}{3} = \frac{1}{4}x + \frac{5}{4}$

$x = 15 - 6y$

$x = 4y - 5$

$15 - 6y = 4y - 5$

5. $\begin{cases} x - y = -5 \\ -2x + 2y = 10 \end{cases}$

??

$y = x + 5$

$y = x + 5$

$x + 5 = x + 5$

$-x \quad -x$

$5 = 5$

true statement

Infinite # of solutions

6. $\begin{cases} x - y = -5 \\ -2x + 2y = 8 \end{cases}$

??

$y = x + 5$

$y = x + 4$

$x + 5 = x + 4$

$-x \quad -x$

$5 = 4$

NOT TRUE

no solution

$y = x + 5$

$y = x + 4$

same slope different y-int

Parallel lines

Equivalent Equations Method

$$\begin{cases} y = 6x + 4 \\ y = 4x - 2 \end{cases}$$

Because we are looking for a common solution, we can assume the x-values in the two equations are the same, and the y-values are the same.

If the y-values are the same ...

$6x + 4 = 4x - 2$ solve for x

Classwork

Page 33, #'s 3-8

Solve each system of equations.

3. $\begin{cases} y = 6x + 4 \\ y = 4x - 2 \end{cases}$

4. $\begin{cases} y = 3x + 7 \\ y = 5x - 7 \end{cases}$

5. $\begin{cases} y = -2x - 9 \\ y = 12x + 19 \end{cases}$

6. $\begin{cases} y = -x + 16 \\ y = -x - 8 \end{cases}$

7. $\begin{cases} y = 17x - 6 \\ y = 12x + 44 \end{cases}$

8. $\begin{cases} y = -20x + 14 \\ y = -8x - 44 \end{cases}$

Homework

Finish Classwork