

Switching Forms

What do you notice about the equations below?

$$\begin{array}{r}
 8x - 4y = 20 \\
 -8x \quad -8x \\
 -4y = 20 - 8x \\
 \frac{-4y}{-4} = \frac{20-8x}{-4} \\
 y = -5 + 2x \\
 y = 2x - 5
 \end{array}$$

$$\begin{array}{r}
 y = 2x - 5 \\
 4y = 8x - 20 \\
 +20 \quad +20 \\
 4y + 20 = 8x \\
 -4y \quad -4y \\
 20 = 8x - 4y
 \end{array}$$

$$\begin{array}{r}
 4x + 3y = 8 \\
 -4x \quad -4x \\
 3y = 8 - 4x \\
 \frac{3y}{3} = \frac{8-4x}{3} \\
 y = \frac{8}{3} - \frac{4}{3}x
 \end{array}$$

Steps:
 1) Move the "x" to the other side.
 2) Divide by the coeff next to the "y".

$$\begin{array}{r}
 16x + 9y = 40 \\
 -16x \quad -16x \\
 9y = 40 - 16x \\
 \frac{9y}{9} = \frac{40-16x}{9} \\
 y = \frac{40}{9} - \frac{16}{9}x
 \end{array}$$

Steps:
 1) Move the x to the other side using inverse operations
 2) Divide by the coefficient attached to the y

$$\begin{array}{r}
 13x - 7y = -35 \\
 -13x \quad -13x \\
 -7y = -35 - 13x \\
 \frac{-7y}{-7} = \frac{-35-13x}{-7} \\
 y = 5 + \frac{13}{7}x
 \end{array}$$

Steps:
 1) Move the x to the other side using inverse operations
 2) Divide by the coefficient attached to the y

$$5x + y = -22$$

Steps:
 1) Move the x to the other side using inverse operations
 2) Divide by the coefficient attached to the y

LET'S PLAY A GAME!!!

$$15x + 8y = 56$$

ANSWER

$$y = -15/8x + 7$$

$$x + y = 7$$

ANSWER

$$y = -x + 7$$

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

ANSWER

$$y = 2/3x + 2$$

$$11x - 4y = -24$$

ANSWER

$$y = 11/4x + 6$$

$$4x + y = 5$$

ANSWER

$$y = -4x + 5$$

$$X - 4y = 12$$

ANSWER

$$y = 1/4x - 3$$

$$12x - 5y = -44$$

ANSWER

$$y = 12/5x + 44/5$$

$$x + 7y = -7$$

ANSWER

$$y = -1/7x - 1$$

WRITING
EQUATIONS FROM
WORD PROBLEMS