

### **3.8: Rewriting Equations and Formulas**

\*Goal: Rewrite an equation so it is in function form

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\*Recall that all functions start with:  $y =$

**Function form:** means to isolate  $y$ .

\*follow same rules as equation solving – get rid of what is bothering  $y$  by going in reverse PEMDAS.

**Ex:**  $4x + 2y = 8$

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

**Ex:**  $-2x + y = 6$

$$\begin{array}{r} +2x \quad +2x \\ \hline y = 6 + 2x \end{array}$$

**Ex:**  $3x + 2y = 8$

$$\begin{array}{r} -3x \quad -3x \\ \hline 2y = 8 - 3x \\ 2 \quad 2 \\ y = 4 - \frac{3}{2}x \end{array}$$

**Ex:**  $\frac{1}{2}x - y = -5$

$$\begin{array}{r} -\frac{1}{2}x \quad -\frac{1}{2}x \\ \hline -y = -5 - \frac{1}{2}x \\ y = 5 + \frac{1}{2}x \end{array}$$

$$\mathbf{Ex:} \quad -2x + 3y = 6$$

$$\begin{array}{rcl} 3y & = & 6 + 2x \\ 3 & & 3 \\ y & = & 2 + \frac{2}{3}x \end{array}$$

$$\mathbf{Ex:} \quad 3x - 5y = 4$$

$$\begin{array}{rcl} -3x & & -3x \\ -5y & = & 4 - 3x \\ -5 & & -5 \\ y & = & -\frac{4}{5} + \frac{3}{5}x \end{array}$$

$$\mathbf{Ex:} \quad -x - 3y = -6$$

$$\begin{array}{rcl} +x & & +x \\ -3y & = & -6 + x \\ -3 & & -3 \\ y & = & 2 + -\frac{1}{3}x \end{array}$$

$$\mathbf{Ex:} \quad 7x - 2y = -8$$

$$\begin{array}{rcl} -7x & & -7x \\ -2y & = & -8 - 7x \\ -2 & & -2 \\ y & = & 4 + \frac{7}{2}x \end{array}$$