

Ex 2 Solve the System

$$\begin{array}{r} 2(3x - 4y = 1) \rightarrow 6x - 8y = 2 \\ -3(2x + 3y = 12) \rightarrow -6x - 9y = -36 \\ \hline -17y = -34 \\ \hline -17 \quad -17 \end{array}$$

$$3x - 4(2) = 1$$

$$y = 2$$

$$\begin{array}{r} 3x - 8 = 1 \\ +8 \quad +8 \\ \hline \end{array}$$

$$\frac{3x}{3} = \frac{9}{3}$$

$$x = 3$$

$$(3, 2)$$

Consistent \rightarrow a single solution

Inconsistent system \rightarrow No Solutions

Ex 3 $2(3x - 2y = 4) \rightarrow 6x - 4y = 8$
 $-6x + 4y = 7$

$$\begin{array}{r} 6x - 4y = 8 \\ -6x + 4y = 7 \\ \hline 0 + 0 = 15 \end{array}$$

$$0 = 15$$

FALSE

No Solutions

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

Not needed to solve system

$$\frac{-2y}{-2} = \frac{-3x + 4}{-2}$$

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

$$\begin{array}{r} -6x + 4y = 7 \\ 4y = 6x + 7 \end{array}$$

$$y = \frac{3}{2}x + \frac{7}{4}$$

Same slope, parallel lines

5.1 Ex 4 Solve the System Day 2 (2)

$$8x - 2y = -4 \rightarrow 8x - 2y = -4$$

$$2(-4x + y = 2) \rightarrow -8x + 2y = 4$$

$$0 + 0 = 0$$

$$0 = 0 \quad \text{TRUE}$$

Infinite Solutions