Warm-Up Solve by Elimination

1) $\begin{cases} x + 6y = 48 \\ -x + y = 8 \end{cases}$

$0x + 7y = 56$

$\frac{7y}{7} = \frac{56}{7}$

$y = 8$

$1x + 6(8) = 48$

$1x + 48 = 48$

$-48 \quad -48$

$\frac{1x}{1} = \frac{0}{1}$

$x = 0$

Solution $(0, 8)$

2) $\begin{cases} -9x + 3y = -51 \\ -7x + 3y = -37 \end{cases}$

$-9x + 3y = -51$

$\ominus \quad -7x + 3y = -37$

$-2x \quad 0y \quad -14$

$\frac{-2x}{-2} = \frac{-14}{-2}$

$x = 7$

Solution $(7, 4)$

$-9(7) + 3y = -51$

$-63 + 3y = -51$

$+63 \quad +63$

$\frac{3y}{3} = \frac{12}{3}$

$y = 4$

HW Answers

1) $(-1, 3)$

2) $(2.\overline{3}, -1)$

3) $(-1, -2)$

4) $(-2, -1)$

5) $(0, -5)$

6) $1x - 2y = 5$

$\ominus \quad 3x - 2y = 9$

$-2x \quad 0y \quad -4$

$\frac{-2x}{-2} = \frac{-4}{-2}$

$x = 2$

$(2, -1.5)$

Elimination (Day 2)

What if the numbers were not the same?

Consider this:

$3 \cdot 5 = 5 \cdot 3$

$15 = 15$

Ex 1

$2 \cdot (7x + 4y = -4) \rightarrow 14x + 8y = -8$

$\ominus \; 5x + 8y = 28$

$9x \;\; 0y \;\; -36$

$\frac{9x}{9} = \frac{-36}{9}$

$x = -4$

$5(-4) + 8y = 28$

$-20 + 8y = 28$

$+20 \quad +20$

$\frac{8y}{8} = \frac{48}{8}$

$y = 6$

$(-4, 6)$

Ex2

5. $(2x+5y=-22) \rightarrow 10x+25y=-110$

$10x+3y=22 \quad \ominus \quad 10x+3y=22$

$0x \quad 22y=-132$

$\frac{22y}{22}=\frac{-132}{22}$

$y=-6$

$10x+3(-6)=22$

$10x-18=22$

$+18 \quad +18$

$\frac{10x}{10}=\frac{40}{10}$

$x=4$

$(4,-6)$