Warm-Up Solve by Elimination

1) $\begin{cases} x + 10y = 3 \\ 4x + 5y = 5 \end{cases}$

$x+10y=3$

$\ominus\ 8x+10y=10$

$-7x = -7$

$\frac{-7x}{-7} = \frac{-7}{-7}$

$x=1$

$4(1)+5y=5$

$4+5y=5$

$-4 \quad -4$

$\frac{5y}{5} = \frac{1}{5}$

$y=0.2$

$(1, 0.2)$

2) $\begin{cases} 4x + 2y = -5 \\ -2x - 4y = 1 \end{cases}$

$2\cdot(4x+2y=-5)$

$-2x-4y=1$

$8x+4y=-10$

$\oplus\ -2x-4y=1$

$\frac{6x}{6} = \frac{-9}{6}$

$x=-1.5$

$-2(-1.5)-4y=1$

$3 - 4y = 1$

$-3 \quad -3$

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

$y=0.5$

Solution

$(-1.5, 0.5)$

HW Answers Check

1) (2, -1)
2) (2, 0)
3) (3, 6)
4) (-1, -3)
5)
6) (1, 6)
7) (4, 3)
8) (6, 13)

6) $7x+3y=25$
$3\cdot(-2x-1y=-8)$

$7x+3y=25$
$\oplus\ -6x-3y=-24$
$0y=1$
x
$x=1$

$-2(1)-y=-8$
$-2-y=-8$
$+2\quad +2$
$-y=-6$
$-1\quad -1$
$y=6$

(1, 6)

5) $3\cdot(-x+8y=-32)$
$3x-y=27$

$-3x+24y=-96$
$\oplus\ 3x-y=27$
$0x\quad 23y=-69$
$\frac{23y}{23}=\frac{-69}{23}$
$y=-3$

$3x-(-3)=27$
$3x+3=27$
$-3\quad -3$
$3x=24$
$x=8$

(8, -3)

Elimination (Day 3)

Now we are multiplying BOTH equations

Ex 1 $5(3x - 2y = -7)$
$2(2x - 5y = 10)$

$15x - 10y = -35$
$\ominus\ 4x - 10y = 20$
$11x \quad 0y \quad -55$

$\frac{11x}{11} = \frac{-55}{11}$

$x = -5$

$3(-5) - 2y = -7$
$-15 - 2y = -7$
$+15 \quad +15$
$\frac{-2y}{-2} = \frac{8}{-2}$
$y = -4$

SOLUTION
$(-5, -4)$

Ex 2 $3(3x + 4y = 27)$
$4(5x - 3y = 16)$

$9x + 12y = 81$
$\oplus\ 20x - 12y = 64$
$29x \quad 0y = 145$

$\frac{29x}{29} = \frac{145}{29}$

$x = 5$

$5(5) - 3y = 16$
$25 - 3y = 16$
$-25 \quad -25$
$\frac{-3y}{-3} = \frac{9}{-3}$
$y = 3$

$(5, 3)$

$27 \times 3 = 81$