

HOMEWORK QUESTIONS

#3 $y = 2 - x$
 $5 = y + 2x$

$5 = (2 - x) + 2x$

$5 = 2 + x$

$\frac{-2 \quad -2}{-2 \quad -2}$

$3 = x$

$(3, -1)$

$y = 2 - x$

$y = 2 - 3$

$y = -1$

#1 $x + y = 22$
 $x - y = 8$

① $x + y = 22$

$\frac{-y \quad -y}{-y \quad -y}$

$x = 22 - y$

② $(22 - y) - y = 8$

$\frac{22 \quad -2y \quad -22}{-22 \quad -2y \quad -22}$

$\frac{-2y \quad -14}{-2y \quad -14}$

$\frac{-2y \quad -14}{-2y \quad -14}$

$y = +7$

$x + (+7) = 22$

$x + 7 = 22$

$x = 15$

$(15, 7)$

Elimination Method RECAP

Explain why elimination is the best method to solve the system of equations below and solve.

$$\begin{array}{r} (-) \quad 7x + 2y = 24 \\ \quad 8x + 2y = 30 \\ \hline \quad -x = -6 \\ \quad \frac{-1}{-1} = \frac{-6}{-1} \\ \quad \quad x = 6 \end{array}$$

$(6, -9)$

$$\begin{array}{r} 7(6) + 2y = 24 \\ 42 + 2y = 24 \\ \frac{-42}{-42} \quad \quad \frac{-42}{-42} \\ \hline \quad 2y = -18 \\ \quad \frac{2}{2} = \frac{-18}{2} \\ \quad \quad y = -9 \end{array}$$

What do you do when you have no matching coefficients?

Multiply one or both equations by a number to create matching coefficients.

Ex. 1)

$$\begin{aligned} 2(x + 3y &= 6) \\ 2x - 7y &= -1 \end{aligned}$$

LCM

1: 1, 2, 3, 4, 5, ...

2: 2, 4, 6, 8, ...

$$\begin{aligned} (-) 2x + 6y &= 12 \\ 2x - 7y &= -1 \end{aligned}$$

$$\begin{array}{r} 12y = 13 \\ \hline 13y = 13 \\ \hline y = 1 \end{array}$$

$$y = 1$$

$$(3, 1)$$

$$x + 3y = 6$$

$$x + 3(1) = 6$$

$$x + 3 = 6$$

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

$$x = 3$$

Ex. 2)

$$\begin{aligned} 9x + 3y &= 12 \\ 3(2x + y &= 5) \end{aligned}$$

$$(-) 9x + 3y = 12$$

$$6x + 3y = 15$$

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

$$x = -1$$

$$(-1, 7)$$

$$2x + y = 5$$

$$2(-1) + y = 5$$

$$\begin{array}{r} -2 + y = 5 \\ +2 \quad +2 \\ \hline y = 7 \end{array}$$

$$y = 7$$

Ex. 3)

$$\begin{aligned} 5(3x - y &= 14) \\ 3(5x + 4y &= 12) \end{aligned}$$

$$\begin{aligned} 15x - 5y &= 70 \\ 15x + 12y &= 36 \\ \hline -17y &= 34 \\ \frac{-17}{-17} & \quad \frac{34}{-17} \end{aligned}$$

$$y = -2 \quad \boxed{(4, -2)}$$

$$3x - (-2) = 14$$

$$3x + 2 = 14$$

$$3x = 12 \quad x = 4$$

Ex. 4)

$$x + y = -3$$

$$5x - 2y = -50$$

Start

$\begin{array}{r} X - y = -6 \\ X + y = -8 \end{array}$	$\begin{array}{r} -7 + y = -8 \\ +7 \quad \quad +7 \\ \hline y = -1 \end{array}$
$\begin{array}{r} 2X = -14 \\ \frac{2}{2} \quad \quad \frac{2}{2} \\ X = -7 \end{array}$	$\begin{array}{r} y = -1 \\ (-7, -1) \end{array}$