#3 $y = \boxed{2-x}$

$5 = \boxed{y} + 2x$

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

$5 = 2 + x$

$\dfrac{-2 \quad -2}{3 = x}$

$(3, -1)$

$y = 2 - x$
$y = 2 - 3$
$y = -1$

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

① $x + y = 22$

$\dfrac{-y \quad -y}{x = 22 - y}$

② $(22 - y) - y = 8$

$22 - 2y = 8$

$\dfrac{-22 \qquad -22}{-2y = -14}$

$\dfrac{-2y}{-2} = \dfrac{-14}{-2}$

$y = +7$

$(15, 7)$

$x + (+7) = 22$
$x + 7 = 22$
$x = 15$

Elimination Method RECAP

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

$$(-) \quad \begin{array}{l} 7x + 2y = 24 \\ 8x + 2y = 30 \end{array}$$

$$\frac{-x}{-1} = \frac{-6}{-1}$$

$$x = 6$$

$$(6, -9)$$

$$7(6) + 2y = 24$$
$$42 + 2y = 24$$
$$-42 \qquad -42$$
$$\frac{2y}{2} = \frac{-18}{2}$$
$$y = -9$$

What do you do when you have no matching coefficients?

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

Ex. 1)

$2(x + 3y = 6)$
$2x - 7y = -1$

LCM
1 : 1, ②, 3, 4, 5, ...
2 : ②, 4, 6, 8, ...

$(-)\ 2x + 6y = 12$
$2x - 7y = -1$
$$\frac{13y}{13} = \frac{13}{13}$$
$y = 1$ $\boxed{(3,1)}$

$x + 3y = 6$
$x + 3(1) = 6$
$x + 3 = 6$
$-3\ \ -3$
$x = 3$

Ex.2)

$9x + 3y = 12$
$3(2x + y = 5)$

$(-)\ 9x + 3y = 12$
$6x + 3y = 15$
$$\frac{3x}{3} = \frac{-3}{3}$$
$x = -1$ $\boxed{(-1,7)}$

$2x + y = 5$
$2(-1) + y = 5$
$-2 + y = 5$
$+2\ \ \ \ +2$ $y = 7$

Ex. 3)

$5(3x - y = 14)$
$3(5x + 4y = 12)$

$(-) \quad 15x - 5y = 70$
$ \quad 15x + 12y = 36$

$$\frac{-17y}{-17} = \frac{34}{-17}$$

$y = -2$

$3x - (-2) = 14 \qquad \boxed{(4, -2)}$

$3x + 2 = 14$

$3x = 12 \quad x = 4$

Ex. 4)

$x + y = -3$
$5x - 2y = -50$

Start

#1

$x - y = -6$
$x + y = -8$

(+)

$2x = -14$
$\dfrac{2x}{2} = -\dfrac{14}{2}$
$x = -7$

$-7 + y = -8$
$+7 \qquad +7$
$y = -1$

$(-7, -1)$