Example 1

$$4x - 3y = -1 \quad (1)$$
$$5x - 2y = 4 \quad (2)$$

(1) x 2 $\quad 8x - 6y = -2 \quad (3)$

(2) x 3 $\quad 15x - 6y = 12 \quad (4)$

(4) − (3) $\quad 7x = 14$

$$x = \frac{14}{7}$$

$$\underline{x = 2}$$

Sub for x in (2)

$$5(2) - 2y = 4$$
$$10 - 2y = 4$$
$$-2y = 4 - 10$$
$$-2y = -6$$
$$y = \frac{-6}{-2}$$
$$\underline{y = 3}$$

$$\begin{cases} x = 2 \\ y = 3 \end{cases}$$

Example 2

$$3x + 2y = 12 \quad (1)$$
$$5x - 4y = -2 \quad (2)$$

(1) x 2 $\quad 6x + 4y = 24 \quad (3)$

② + ③ $\quad 11x = 22$

$$x = \frac{22}{11}$$

$$\underline{x = 2}$$

Sub for x in ①

$$3(2) + 2y = 12$$
$$6 + 2y = 12$$
$$2y = 12 - 6$$
$$2y = 6$$
$$y = \frac{6}{2}$$
$$\underline{y = 3}$$

$$\begin{cases} x = 2 \\ y = 3 \end{cases}$$

Example 3

$$5x - 8y = 2 \quad ①$$
$$3x - 2y = 4 \quad ②$$

② × 4 $\quad 12x - 8y = 16 \quad ③$

③ − ① $\quad 7x = 14$

$$x = \frac{14}{7}$$

$$\underline{x = 2}$$

Sub for x in ①

$$5(2) - 8y = 2$$

$$10 - 8y = 2$$
$$-8y = 2 - 10$$
$$-8y = -8$$
$$y = \frac{-8}{-8}$$
$$\underline{y = 1}$$

$$\begin{cases} x = 2 \\ y = 1 \end{cases}$$

Exercise

1) $2x - 4y = 6$
$3x - 2y = 13$

$x = 5$
$y = 1$

2) ~~$3x + 5y = 2$~~
~~$2x - 10y = -12$~~

3) $5x - y = 12$
$4x - 3y = 3$

$x = 3$
$y = 3$

4) $3x + 5y = 22$
$2x - 10y = -12$

$x = 4$
$y = 3$

5) $4x - 2y = 14$
$5x - 4y = 16$

$x = 4$
$y = 1$

6)

$$4x + 3y = 22$$
$$2x - 2y = 4$$

$x = 4$

$y = 2$