Review of Simultaneous Equations

Ex 1

$$5x + 2y = 18 \quad (1)$$
$$3x - 4y = 16 \quad (2)$$

(1) × 2

$$10x + 4y = 36 \quad (3)$$

(2) + (3)

$$13x = 52$$
$$x = \frac{52}{13} = 4$$
$$\underline{x = 4}$$

Sub for x in (1)

$$5(4) + 2y = 18$$
$$20 + 2y = 18$$
$$2y = 18 - 20$$
$$2y = -2$$
$$y = -\frac{2}{2}$$
$$\underline{y = -1}$$

$$\begin{cases} x = 4 \\ y = -1 \end{cases}$$

Ex 2

$$4x - 3y = 10 \quad (1)$$
$$5x - 2y = 16 \quad (2)$$

(1) × 2

$$8x - 6y = 20 \quad (3)$$

(2) × 3

$$15x - 6y = 48 \quad (4)$$

(4) − (3)

$$7x = 28$$

$$x = \frac{28}{7} = 4$$

$$\underline{x = 4}$$

Sub for x in ①

$$4(4) - 3y = 10$$

$$16 - 3y = 10$$

$$-3y = 10 - 16$$

$$-3y = -6$$

$$y = \frac{-6}{-3}$$

$$\underline{y = 2}$$

$$\begin{cases} x = 4 \\ y = 2 \end{cases}$$