

How to do

Simultaneous Equations...

If the signs are the same (+, -) then you have to -

If the signs are different (+, -) then you need to +

Example of an equation:

$$\begin{aligned} 3x + y &= 9 \\ 2x + y &= 7 \end{aligned}$$

The signs are the same, so you need to -

So you do:

$$\begin{aligned} 3x & \\ + 2x & \\ = 5x & \end{aligned}$$

(e.g)

$$\begin{aligned} 3x + y &= 9 \\ 2x + y &= 7 \\ x &= 2 \\ (3 \times 2) + y &= 9 \\ 6 + y &= 9 \\ y &= 3 \end{aligned}$$

(x = 2, y = 3)

(e.g)

$$\begin{aligned} 3h - 4m &= 13 \\ 2h + 3m &= 3 \\ 5h &= 16 \\ h &= 3.2 \\ (3 \times 3.2) - 4m &= 13 \\ 9.6 - 4m &= 13 \\ 4m &= 3.4 \\ m &= 0.85 \end{aligned}$$

Simultaneous equations

$$\begin{aligned} (x1) \quad 2x + 3y &= 7 \\ (x3) \quad 3x - y &= 5 \end{aligned}$$

The middle number has to be the same.

times the top equation by 1 and the bottom equation by 3.

$$\begin{aligned} 2x + 3y &= 7 \\ + 9x - 3y &= 15 \end{aligned}$$

If the 2 signs are the same, Subtract, if they are different, add.

$$11x = 22$$

divide 22 by 11 to get x. x is too.

$$22 \div 11 = x$$

put 2 in the original equation to work out y.

$$x = 2 \quad x = 2$$

$$4 + 3y = 7$$

$$\begin{aligned} 7 - 4 &= 3y \\ 3y &= 3 \\ y &= 1 \end{aligned}$$

$$7 - 4 = 3y = 3$$

$$3y = 3 \quad y = 1$$