mathsstar
the home of maths

Example Question:

$$3x + 4y = 30$$
$$x + 2y = 14$$

Step 1: change one of the equations so you have either the x's the same or the y's the same:

$$3x + 4y = 30$$
$$x + 2y = 14 \quad \text{--- x2 --->} \quad 2x + 4y = 28$$

Step 2: look at the signs in front of the 2 items that are now the same.

- If the signs are the same, SUBTRACT
- If the signs are different, ADD

$$3x + 4y = 30$$
$$- \quad 2x + 4y = 28$$
$$x \qquad = 2 \qquad \text{Now you know that } x = 2$$

Step 3: now you know one of the values, substitute it into one of the equations to find the value of the other letter:

If **x = 2**, **x + 2y = 14** becomes
$$2 + 2y = 14$$
$$2y = 12$$
$$y = 6$$

Now you have your answer: **x = 2 and y = 6**

Practice Questions:

1) $x + 4y = 19$
   $2x + 3y = 18$

2) $2x + 3y = 42$
   $3x - y = 8$

3) $4x - y = 14$
   $5x - 2y = 16$

4) $5x + 3y = 5$
   $2x - y = -9$

Answers:
1) x = 3 and y = 4
2) x = 6 and y = 10
3) x = 4 and y = 2
4) x = -2 and y = 5