Hack 1 - Using the calculator to solve Simultaneous Equations

Your calculator will solve simultaneous equations for you - yes you heard me correct - **it will solve them!**

Although it will solve them - you still have to show your mathematical steps to get to the answer - however - you will know that your answer is correct if you use the calculator properly.

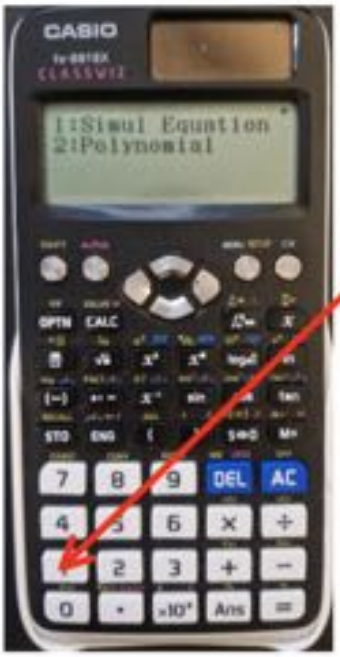
In order to use this function here are some guided steps to help you:

From the home screen, press menu and select Option A - on the screen it is displayed as A: Equation/Function

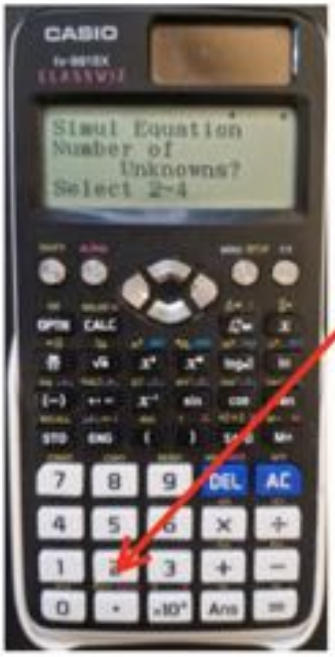
After pressing the menu button, you will be presented with a screen detailing your options as in the image.

Scroll to Option A: Equation / Func by using the right arrow button indicated.

Ensure that Option A: Equation / Func is highlighted and press the equals button.



Having pressed the equals button, you will be presented with this screen. Select 1: Simul Equation by pressing the 1 digit key.



You will then be presented with this screen. The calculator will ask you to enter the number of unknows. You will always enter 2 here for GCSE.

You will then me taken to this screen where you can enter your two equations. Just enter the number of x's and the number of y's and the number following the equals sign. In this case we are going to use the following equations:

$$3x + 2y = 14$$
$$5x + 2y = 2$$

Once the equations have been entered into the calculator, they will be displayed on the screen as in the image.

The equals button can then be pressed.

When the equals button is pressed for the first time, the display will show the value of x for the solution. In this case x = -6.

When the equals button is pressed for the second time, we obtain the y value of the solution. In this case y=16

As explained at the beginning, if used correctly, this will provide the correct answers to the simultaneous equations. However, it is important when you answer one of these questions, that you show all your working and steps to arrive at your answer.

For clarity, below is a model solution to the question used in the example above.

Question:

Solve the simultaneous equations:

$$3x + 2y = 14 \quad (1)$$
$$5x + 2y = 2 \quad (2)$$

Equation 1 – Equation 2:

$$-2x = 12$$

Divide both sides by -2:

$$x = -6$$

Substitute value of $x = -6$ into equation 1:

$$3 \times (-6) + 2y = 14$$

$$-18 + 2y = 14$$

Add 18 to both sides:

$$2y = 32$$

Divide both sides by 2:

$$y = 16$$

Solution:

$$\underline{x = -6, y = 16}$$