

When solving for a particular variable you must use simplifying techniques to first simplify the equation. Second, you might have to apply operations (i.e. +, -, x ...) to either side of the equals sign to further reduce and isolate the variable which you are solving for.

General method to solving:

1. expand all brackets.
2. collect like terms.
3. move all terms with the variable you are looking for to one side of the equal sign.
4. move all other term without the variable to the other side.
5. extract the variable you are solving for.
6. isolate the variable you are solving for.
7. clean up, in terms of simplifying the resulting equation to something that looks nice!

You must remember that you must apply the operation to the whole side of the equation and then use simplifying techniques. You can not apply operations to individual terms.

add/subtract

$+$ / $-$

$$5 + 6 = 11$$

$$5 = 11 - 6$$

multiply/divide

$\times/\div$

$$\frac{5+6}{5} = \frac{11}{5}$$

$$1 + \frac{6}{5} = \frac{11}{5}$$

exponents

$\wedge$

$$(5+6)^2 = (11)^2$$

$$5^2 + 2(5)(6) + 6^2 = 11^2$$