

Second SeniorSpecial Subject: Maths I Term

Equations and Formulas

What is an Equation?

An equation says that two things are equal. It will have an equals sign "=" like this:

$$x + 2 = 6$$

That equation says: **what is on the left ($x + 2$) is equal to what is on the right (6)**

So an equation is like a **statement** "*this equals that*"

(Note: this equation has the solution $x=4$)

What is a Formula?

A formula is a fact or rule that uses mathematical symbols.

It will usually have:

- an equals sign (=)
- two or more **variables** (x, y, etc) that stand in for values we don't know yet.

It shows us how things are related to each other.

Example: The formula for finding the volume of a box is:

$$V = lwh$$

V stands for volume, **l** for length, **w** for width, and **h** for height.

When $l=10$, $w=4$, and $h=5$, then:

$$V = 10 \times 4 \times 5 = 200$$

These are all equations, but only some are formulas:

$x = 2y - 7$	Formula (relating x and y)
$a^2 + b^2 = c^2$	Formula (relating a , b and c)
$x/2 + 7 = 0$	Not a Formula (just an equation)

Without the Equals

Sometimes a formula is written without the "=":

Example: The formula for the volume of a box is:

$$lwh$$

But in a way the "=" is still there, because we can write $V = lwh$ if we want to.

Subject of a Formula

The "subject" of a formula is the single variable (usually on the left of the "=") that everything else is equal to.

Example: in the formula

$$s = ut + \frac{1}{2}at^2$$

"s" is the subject of the formula

Exercises:

- Write True or False. Justify the false ones.
 - a. You can never write a formula without the equals symbol. _____
 - b. The subject of a formula is the single variable. _____
 - c. An equation is like a statement. _____
 - d. All equations can be formulas. _____

- Complete the sentences.

A formula is a fact or rule that uses _____ symbols.

An equation says that two things are _____.

The _____ of a formula is usually on the _____ of the "=".