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Second Senior

Special 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)

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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

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

"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 "=".

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