ALGEBRA
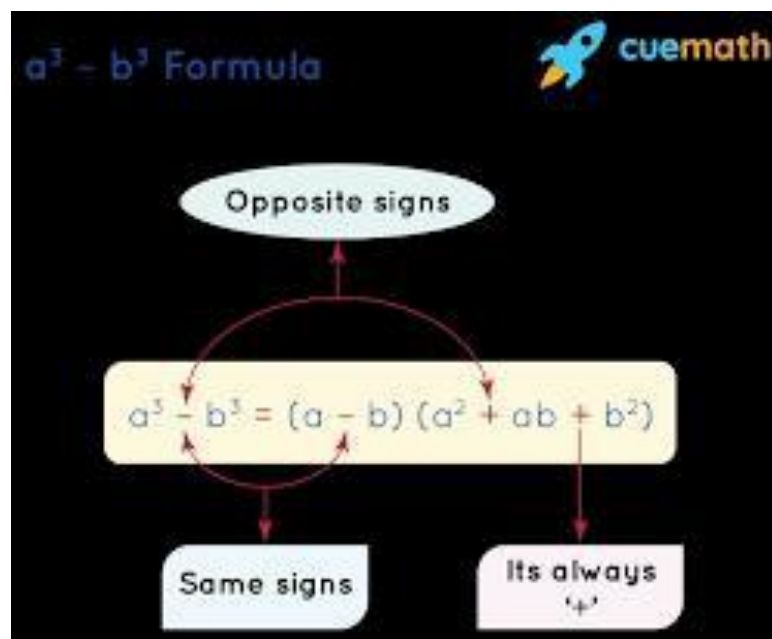# USING A,B

Algebra is the study of variables and the rules for manipulating these variables in formulas; it is a unifying thread of almost all of mathematics. Elementary algebra deals with the manipulation of variables as if they were numbers and is therefore essential in all applications of mathematics

Definition for $a^3 - b^3$

The $a^3 - b^3$ formula can be verified, by **multiplying** $(a - b)(a^2 + ab + b^2)$ and see whether you get $a^3 - b^3$. The $a^3 - b^3$ formula or the difference of **cubes** formula is explained below:

$a^3 - b^3$ Formula $= a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Example :

Find the value of $108^3 - 8^3$ using a^3 - b^3 formula.

Solution:

To find: $108^3 - 8^3$.

Let us assume that a = 108 and b = 8.

We will substitute these in the formula of $a^3 - b^3$.

$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

$108^3 - 8^3 = (108 - 8)(108^2 + (108)(8) + 8^2)$

= (100) (11664+864+64)

= (100)(12592)

=1259200