



## 4 - Algebra Basics 2

### Content

- An **equation** contains an 'equals' sign and at least one variable. A value can be found for the variable and this is known as solving the equation.
- A **formula** is a special type of equation which is a rule for working things out such as area.
- For example the formula for the area of a rectangle is  $A = l \times w$

where A = area, l = length and w = width

- An **identity** looks like a formula but it is true for all values.

for example  $a + b \equiv b + a$

or  $(x + 1)^2 \equiv x^2 + 2x + 1$

**Substitution** is where you replace a letter with a number in a formula or expression, to calculate a value.

**Examples:**

1) Find the value of  $5c$  when  $c = 4$

$5 \times c$

$5 \times 4 = \underline{20}$

2) Evaluate  $3a^2$  when  $a = 5$

$3 \times 5^2$

$3 \times 25 = \underline{75}$

3) The velocity of a car is given by  $v = u + at$ , find value of  $v$  when  $u=10$ ,  $a= -2$  and  $t=4$

$v = u + a \times t$

$v = 10 + -2 \times 4$

$v = 10 - 8$

$\underline{v = 2}$

### Linked Prior Topics

Bidmas

### Vocabulary

Equation, formula, identity and substitution

### Linked Future Topics

Solving and forming equations, rearranging formula