

Keywords

Integer	A whole number that can be positive, negative or zero.	$-3, 0, 92$
Decimal	A number with a decimal point in it. Can be positive or negative.	$3.7, 0.94, -24.07$
Negative Number	A number that is less than zero . Can be decimals.	$-8, -2.5$
Expression	A mathematical statement written using symbols, numbers or letters ,	$3x + 2$ or $5y^2$
Equation	A statement showing that two expressions are equal	$2y - 17 = 15$
Identity	An equation that is true for all values of the variables An identity uses the symbol: $\equiv$	$2x \equiv x+x$
Formula	Shows the relationship between two or more variables	Area of a rectangle = length x width or $A = L \times W$
Inverse	Opposite	The inverse of addition is subtraction. The inverse of multiplication is division.
Writing Formulae	Substitute letters for words in the question.	Bob charges £3 per window and a £5 call out charge. $C = 3N + 5$ Where N=number of windows and C=cost
Substitution	Replace letters with numbers. Be careful of $5x^2$. You need to square first, then multiply by 5.	$a = 3, b = 2$ and $c = 5$. Find: 1. $2a = 2 \times 3 = 6$ 2. $3a - 2b = 3 \times 3 - 2 \times 2 = 5$ 3. $7b^2 - 5 = 7 \times 2^2 - 5 = 23$

Adding and Subtracting

Addition	To find the total , or sum , of two or more numbers. 'add', 'plus', 'sum'	$3 + 2 + 7 = 12$
Subtraction	To find the difference between two numbers. To find out how many are left when some are taken away. 'minus', 'take away', 'subtract'	$10 - 3 = 7$
Simplifying Expressions	Collect 'like terms' . Be careful with negatives. x^2 and x are not like terms.	$2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$

Multiplying and Dividing

Multiplication	Can be thought of as repeated addition . 'multiply', 'times', 'product'	$3 \times 6 = 6 + 6 + 6 = 18$
Division	Splitting into equal parts or groups. The process of calculating the number of times one number is contained within another one . 'divide', 'share'	$20 \div 4 = 5$ $\frac{20}{4} = 5$
Remainder	The amount ' left over ' after dividing one integer by another.	The remainder of $20 \div 6$ is 2, because 6 divides into 20 exactly 3 times, with 2 left over.
Expand	To expand a bracket, multiply each term in the bracket by the expression outside the bracket.	$3(m + 7) = 3x + 21$

BIDMAS

BIDMAS	An acronym for the order you should do calculations in. BIDMAS stands for ' Brackets, Indices, Division, Multiplication, Addition and Subtraction '. Indices are also known as 'powers' or 'orders'. With strings of division and multiplication, or strings of addition and subtraction, and no brackets, work from left to right.	$6 + 3 \times 5 = 21, not\ 45$ $5^2 = 25$, where the 2 is the index/power. $12 \div 4 \div 2 = 1.5, not\ 6$
Solve	To find the answer /value of something Use inverse operations on both sides of the equation (balancing method) until you find the value for the letter.	Solve $2x - 3 = 7$ Add 3 on both sides $2x = 10$ Divide by 2 on both sides $x = 5$
Rearranging Formulae	Use inverse operations on both sides of the formula (balancing method) until you find the expression for the letter.	Make x the subject of $y = \frac{2x-1}{z}$ Multiply both sides by z $yz = 2x - 1$ Add 1 to both sides $yz + 1 = 2x$ Divide by 2 on both sides $\frac{yz + 1}{2} = x$ We now have x as the subject.

