

## Year 7 Sets 1, 2 and 3 Summer Half Term 1

Topic/Skill	Definition/Tips	Example
1. Expression	A mathematical statement written using <b>symbols, numbers or letters,</b>	$3x + 2$ or $5y^2$
2. Equation	A statement showing that <b>two expressions are equal</b>	$2y - 17 = 15$
3. Identity	An equation that is <b>true for all values</b> of the variables  An identity uses the symbol: $\equiv$	$2x \equiv x+x$
4. Formula	Shows the <b>relationship</b> between <b>two or more variables</b>	Area of a rectangle = length x width or $A = L \times W$
5. Simplifying Expressions	<b>Collect 'like terms'.</b>  Be careful with negatives. $x^2$ and $x$ are not like terms.	$2x + 3y + 4x - 5y + 3$ $= 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
6. $x$ times $x$	The answer is $x^2$ not $2x$ .	Squaring is multiplying by itself, not by 2.
7. $p \times p \times p$	The answer is $p^3$ not $3p$	If $p=2$ , then $p^3=2 \times 2 \times 2=8$ , not $2 \times 3=6$
8. $p + p + p$	The answer is $3p$ not $p^3$	If $p=2$ , then $2+2+2=6$ , not $2^3 = 8$
9. Expand	To expand a bracket, <b>multiply</b> each term <b>in the bracket</b> by the expression <b>outside</b> the bracket.	$3(m + 7) = 3m + 21$
10. Factorise	The <b>reverse of expanding.</b> Factorising is writing an expression as a product of terms by ' <b>taking out</b> ' a <b>common factor.</b>	$6x - 15 = 3(2x - 5)$ , where 3 is the common factor.
11. Solve	To find the <b>answer/value</b> of something  <b>Use inverse operations</b> 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 $x = 5$
12. Inverse	<b>Opposite</b>	The inverse of addition is subtraction. The inverse of multiplication is division.
13. Rearranging Formulae	<b>Use inverse operations</b> 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.
14. Writing Formulae	<b>Substitute letters for words</b> 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
15. Substitution	<b>Replace letters with numbers.</b> 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. $7b^2 - 5 = 7 \times 2^2 - 5 = 23$