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| **Seven times tables**7 x 1 = 77 x 2 = 147 x 3 = 217 x 4 = 287 x 5 = 357 x 6 = 427 x 7 = 497 x 8 = 567 x 9 = 637 x 10 = 707 x 11 = 777 x 12 = 84 | **Vertical** axis is called the *y*-axis**Horizontal** axis is called the *x*-axis**Sequences**A “**Sequence**” is a succession of terms formed according to a rule “**Terms**” are the numbers in a sequence“**Term to term** **rule”** lets you find the next term in a sequence if you know the previous term“**Difference**” is the numerical difference between two numberse.g. difference in between 8 and 5 is 8 – 5= 3A **linear sequence** is a number pattern which increases (or decreases) by the same amount each time. The amount it increases or decreases by is known as the common difference. E.g 4,7,10,13… and 15,11,7,3…A **non-linear sequence** is a number pattern which does not increases (or decreases) by the same amount  “**Ascending**” means to go up“**Descending**” means to go down | A “**Function**” machine takes an **input**, applies a rule(operation) then delivers an answer, **output**.**Algebraic Notation 1**Image result for function machine input outputThe four basic **operations** are + - x ÷To **square** a number is to multiply a number by itself e.g. The square of 5 is 5×5 =5²= 25**Inverse** operations are the opposite operations e.g the inverse of multiplication is division**“Expressions”** are made up of terms which may include letters, number and operators e.g. ab², ab + 5 and 4d -5**Variable** is a quantity that can take on a range of values, often denoted by a letter, *x*, *y* etc**Coefficient** is the number in front of a variable**Constant** is a number or quantity that does not vary |
| **Algebraic Notation 2****Commutative** is where a calculation can be done in any order to give the same result e.g. 5 x 4 = 4 x 5 6 + 3 = 3 + 6**Substitute** is where we replace a letter with a number. **Evaluate** means to calculate the value of. e.g. if y = 7 evaluate 5y . Answer 5 x 7 = 35 **Brackets** are used in pairs to group things together e.g. 2(x + 1) is two lots of x + 1**Equation** is a statement that two things are equal, it contains expressions on both sides of the equal sign. e.g. 5 = 2x + 1 **Two step function machine** has two operations**Consecutive** numbers are numbers which follow in order without gaps. e.g 12, 13, 14…**Linear** functions result in a straight line graph  Linear  | 7 + 3 = 107 = 10 – 310 – 7 = 3**Equality and Equivalence****Equality** means having the same value e.g. 1minute = 60 seconds**Fact families** are a group of maths facts using the same numbers**Unknown** is another word for a variable, a value we don’t know yet. The Unknown has one distinct valueWhen we **solve** an equation we find the value of the unknown e.g. solve x + 5 = 8 answer x = 3In the above example x = 3 is the **solution** (answer)We solve equations by doing the **inverse** operation**Terms** in algebra are single numbers, variables or product of several numbers and variables**Product** is the result when you multiply one number by another. Product of 4 and *x* is 4*x* | **Equality and Equivalence 2****Like terms** contain the same variable eg 4a and -2a or 8 and 13 or 9m2 and 3m2**Unlike terms** do not contain the same variable e.g. 4*y* and 3*x* are unlike terms**Equivalen**t $≡$ means of equal valuee.g 2x + 3x $≡$5xis true for all values of xWe can **simplify** an expression by **collecting** like terms. e.g. 7a + 5b – 2a + b ≡5a + 6bA mathematical **convention** is an agreed way of doing something in maths eg we write 3 × y as 3*y* not y3**One step** equations have only one operatione.g. 3*x* = 15 6 = *y* – 2**Two step** equations have two operationse.g. 3*y* + 5 = 9 $\frac{m}{2}$ + 7 = 3The **Index** of a number tells you how many times to multiply the number by itselfe.g. *y*3 means *y × y × y*. We say *y*3 as “*y* to the power of 3” or *y* cubed**Indices** is the plural of index |