Kemnal Technology College

Year 9 Term 1 – Kemnal Keys

ambitious minds

Calculations

1. **Product :** the result of the multiplication of two or more numbers
2. **Sum:** the results of the addition of two or more numbers
3. **Order Of Operations:**

   B – Brackets
   I – Indices
   D – Division
   M – Multiplication
   A – Addition
   S – Subtraction
4. **Multiplying & Dividing With Negative Numbers**

   - When the signs are different the answer is negative.
   - When the signs are the same the answer is positive.

   + + = +
   - - = +
   - + = -
   + - = -

Introduction to Algebra

1. **Expression** - A mathematical statement written using symbols, numbers or letters,
2. **Equation** - A statement showing that two expressions are equal
3. **Formula** - Shows the relationship between two or more variables
4. **Simplifying** - Collect 'like terms'. (Be careful with negatives. x^2 and x are not like terms)
5. **Expanding** - To expand a bracket, multiply each term in the bracket by the expression outside the bracket.
6. **Factorising** - reverse of expanding. It's writing an expression as a product of terms by 'taking out' a common factor.
7. **Expanding Double Brackets**

   F – multiply the first terms in the brackets
   O – multiply the outside terms of both brackets
   I – multiply the inside terms of both brackets
   L – multiply the last terms of both brackets

Properties of Whole Numbers

1. **Prime number** - A whole number greater than 1 whose only factors are 1 and itself
2. **Factor** – a factor is a whole number that can be divided evenly into another number
3. **Multiple** – a number that may be divided by another a certain number of times without a remainder
4. **Square number** – The number we get after multiplying an integer (not a fraction) by itself
5. **Square Root** – a value that can be multiplied by itself to give the original number
   Cube Root – a number that, when used in a multiplication three times, gives that number

Construction & Loci

1. **Constructions** are done using compass and/or protractor
2. **Constructing Triangles**

- **Side, Side Side (SSS**) Given the lengths f all three sides
  Equilateral triangle is special case of SSS, make all sides equal length
- **Side, Angle, Side (SAS**) Given two sides and the angle between them
- **Angle, Side, Angle (ASA**) Given two angles and the side between them

Sequences

1. **Sequences:** Each element in a sequence is called a term.
2. Each **term** has a specific position in the sequence. This position is the letter n.
3. **Term-to-term Rule:** The difference between consecutive terms in a sequence is called the term-to-term rule (t2t).

Graphs

1. All vertical line graphs (parallel to the y-axis) have an equation of the form: x = c
   For example:
   x = 1: x = -3: x = 4, etc
2. All horizontal line graphs (parallel to the x-axis) have an equation of the form: y = c
   For example:
   y = 3: y = -2: y = 1, etc
3. The equation of a straight line on a graph is made up of a y term, an x term and a number, and can be written in the form of**: y = mx + c.**