

3rd Year Revision List – Set 3

Number

- **Number properties;** including multiples, factors, primes, squares, cubes, roots, prime factor decomposition, highest common factor and lowest common multiple.
- **Percentages,** including percentage of a quantity, percentage increase/decrease, percentage multipliers and reverse percentages.
- **Ratio and proportion;** including equivalent ratios, sharing in a ratio, the unitary method and solving proportionality problems.
- **Rounding and approximating;** including rounding to decimal places, rounding to significant figures and estimating. Use inequality notation to specify error intervals due to rounding.
- **Multiplication and division;** including long multiplication and division of both integers and decimals, and understanding the effects of multiplying and dividing by numbers between 0 and 1.
- **Negative numbers;** including adding, subtracting, multiplying and dividing negative numbers.
- **Fractions;** including fraction of a quantity, comparing fractions, adding, subtracting, multiplying, dividing fractions and reciprocals.
- **Decimals;** including, adding, subtracting, multiplying, dividing and converting between fractions, decimals and percentages.
- **Calculations;** including how to use a calculator to carry out complex calculations.
- **Standard Form;** including writing both large and small numbers in standard form, being able to perform standard form calculations both with and without a calculator.

Algebra

- **Algebraic expressions;** including collecting like terms and simplifying expressions, expanding single brackets, expanding double brackets, factorising into a single bracket, factorising quadratic expressions and algebraic substitution.
- **Solving equations;** including solving linear equations with unknowns on one side, linear equations with unknowns on both sides, linear equations with brackets and forming linear equations.
- **Simultaneous equations;** including solving simultaneous equations by elimination.
- **Quadratic equations;** including solving quadratic equations by first factorising the equation.
- **Inequalities;** including understanding inequalities, representing inequalities on a number line and solving linear inequalities.
- **Changing the subject;** including being able to re-arrange formulae where the new subject appears once.
- **Graphs;** including drawing straight line graphs, simple quadratic and cubic graphs, identifying the gradient and intercept of straight line graphs, and interpreting real life graphs (including rate of change).
- **Trial & Improvement;** including solving equations using Trial & Improvement.
- **Laws of Indices;** including evaluating indices and using the laws of indices for multiplying, dividing indices, raising one power by another and negative indices.

Shape

- **Angles;** including using basic angle rules, angles on parallel lines, interior and exterior angles.
- **Quadrilaterals & symmetry;** including properties of quadrilaterals, reflective and rotational symmetry.
- **Transforming shapes;** including translations, reflections, rotations and enlargements.
- **Locus and constructions;** including being able to carry out standard compass and ruler constructions and being able to solve locus problems.
- **2D and 3D shapes;** including being able to name the parts of a circle, name the special quadrilaterals and know their properties, and name the key 3D solids.
- **Area and perimeter;** calculating the circumference and area of circles. and calculating the perimeter and area of rectangles, parallelograms, triangles, trapeziums and compound shapes.
- **Volume, surface area & density;** including calculating the volume, surface area and density of prisms. Calculate pressure.
- **Pythagoras Theorem;** including understanding and using Pythagoras Theorem.
- **Line segments;** including finding the mid-point of a line and the length of a line.

- **Similarity**; including identifying similar shapes and finding the lengths of unknown sides for similar shapes.
- **Speed, distance, time**; including calculating using speed, distance, time and drawing and interpreting distance/time graphs.

Handling Data

- **Collecting data**; including surveys, sampling and questionnaires.
- **Representing data**; including drawing bar charts, line graphs, frequency polygons, pie charts and scatter graphs.
- **Recording data**; including frequency tables, stem & leaf diagrams
- **Calculating data**; including mean, mode, median and range, and estimating the mean, mode and median from a grouped frequency table.
- **Probability**; including the probability scale, the probability of equally likely outcomes, mutually exclusive events and expected probability.