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Fractions, Decimals and Percentages

Can I work interchangeably between equivalent fractions, decimals and percentages?

Ratio

How do I express a multiplicative relationship between two quantities as a fraction and a ratio?
Do I know how to write a ratio in the form $n : 1$ or $1 : n$?

Estimation and Limits of Accuracy

How do I apply and interpret limits of accuracy, including upper and lower bounds?
How do I use inequality symbols to specify error intervals due to truncation or rounding to decimal places and significant figures?

Area and Circles

What formulae do I use to calculate the area of triangles, circles, parallelograms and trapeziums?
How do I find the circumference or arc length of a circle?

Transformations

How do I construct congruent shapes by considering translation, reflection and rotation?
How do I enlarge a shape by whole, fractional and negative scale factors?

Angles

How do I apply the properties of angles around a point, angles on a straight line and vertically opposite angles?
How do I identify alternate, corresponding and co-interior angles in parallel lines?

Sequences and nth term

How do I recognise different number patterns and identify different types of sequences?
How do I deduce expressions to calculate the nth term of a sequence?

Surds

How do I explain what a surd is?
Do I know how to use the rules to simplify surds and multiply out brackets involving surds?

Pythagoras Theorem

What is the formula for Pythagoras' theorem?
How do I apply the formula to find missing lengths in triangles presented in a variety of real-life contexts?

Surface Area

What does the term surface area mean?
How do I find the surface area of a cylinder?

Indices

Do I know the index laws for multiplication and division of integer powers?
How do I simplify algebraic fractions by cancelling common factors and using index laws?

Intro to Algebra

How do I multiply out two and three brackets?
What does the term factorise mean?
How do I solve linear equations with unknowns on both sides?

Averages

How do I calculate the mean, median and mode for discrete data?
How do you calculate an estimate for the mean of a grouped frequency distribution?
How do I determine the angles to draw a Pie Chart?

Trigonometry

What are the trigonometric ratios?
How do I apply the trigonometric ratios to find unknown angles and lengths?



Constructions

What does the term perpendicular mean?
How do I construct accurate drawings of 2d shapes using a ruler and a protractor?

Venn Diagrams

How do I explain the difference between $P(A \cup B)$ and $P(A \cap B)$?
How do I shade given areas and solve problems using Venn Diagrams where the diagrams may or may not be given?
How do I set up an equation to solve problems involving Venn diagrams?

Bearings and Scale Drawings

How do I use ratio scales to solve problems involving maps and scale drawings?
How do I solve problems involving measuring and drawing bearings?

Congruent and Similar Shapes

What are congruent shapes?
How do I use ratios to solve problems with similar shapes?

Scatter graphs

What are the types of correlation of scatter graphs?
How do I use scatter graphs to make predictions?

Inequalities

How do I solve linear and quadratic inequalities with one unknown?
How do I represent the solution set on a number line?

Equation of a line

What does the m and c represent in the equation $y = mx + c$?
How do I complete a table of values and plot points to draw a straight-line graph?
How do I calculate the gradient of a line and identify if lines are parallel?

Finance

What do the terms debit and credit mean?
How do I complete bank statements?

Percentages

How do I calculate reverse percentages finding the original amount?
How do I calculate compound interest?
How do I solve problems involving growth, decay and repeated percentage change?

Simultaneous Equations

How do I solve simultaneous equations?
How do I find approximate solutions of two equations using two straight lines graphs?

Identifying Algebraic Notation

How do I identify and explain what Expression, Equations, Formulae and Identities are?

Frequency trees and probability trees

How do I complete a frequency tree from given information?
How do I produce a probability tree for dependent and independent events?

Factorising expressions and using quadratic formulae

How do I factorise quadratic expressions?
How do I solve quadratic equations using factorising?

Exact trigonometry

How do I recall the exact values of sine, cosine and tangent for 0° , 30° , 45° and 60° ?

3D plans and elevation

How do I understand diagrams and draw front and side elevations and plans of shapes made from simple solids?
Do I know how to draw 3D shapes on isometric paper?

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