Cambridge Lower Secondary Programme Mathematics Curriculum Framework: Year 9

Number

Properties

Np3 Use efficient methods to add, subtract, multiply and divide fractions
Write a fraction in its simplest form by cancelling common factors.

Np6 Write numbers in standard form

Problem Solving

Ns3 Understand and solve problems involving proportionality
Compare two ratios
Interpret and use ratio in a range of contexts

Ns4 Round numbers to a specified number of decimal places or significant figures
Understand upper and lower bounds

Ns5 Use an electronic calculator efficiently and appropriately to perform complex calculations with numbers of any size, including numbers expressed in standard form
Know not to round during intermediate steps of a calculation; use the sign change and π keys

Ns6 Without using a calculator estimate calculations by rounding numbers to 1 significant figure and multiplying or dividing mentally

Data Handling

Nd1 Collect and tabulate discrete and continuous data, choosing suitable class intervals where appropriate
Select, construct and modify suitable graphical representation of data, including frequency polygons and cumulative frequency diagrams
Examine critically the results of a statistical enquiry and draw conclusions

Nd2 Find the median and quartiles
Estimate the mean, median and interquartile range of a set of grouped data

Nd3 Know that the sum of probabilities of all mutually exclusive outcomes is 1 and use this when solving problems
Understand relative frequency as an estimate of probability and use this to compare outcomes of experiments in a range of contexts.

Algebra

Manipulation

An1 Simplify, factorise or transform algebraic expressions
Add simple algebraic fractions

An2 Solve a simple pair of simultaneous equations algebraically (or graphically)

An3 Construct and solve linear inequalities in one variable
Represent the solution set on a number line

An4 Expand the product of two simple linear expressions and simplify the corresponding quadratic expression

An5 Use positive index notation for integer powers
Apply the index laws for multiplication and division to simple expressions.

Graphs

Ag1 Draw and interpret the graphs of simple quadratic and cubic functions

Ag4 Solve simple quadratic equations by factorisation

Space

Measure

Sm4 Understand and use measures of speed (and other compound measures such as density or pressure) to solve problems
Solve problems involving constant or average rates of change

Sm5 Understand and apply the formula for the volume of a sphere in a variety of contexts

Geometry

Sg1 Use and interpret bearings

Sg5 Find the locus of a point that moves according to given rules

Trigonometry

St1 Understand and apply Pythagoras' theorem

St2 Use sine, cosine and tangent ratios in right-angled triangles to solve problems in 2-D