

Number theory

A.1 Factors

A.2 Divisibility rules

A.3 Prime or composite

A.4 Prime factorisation

A.5 Highest common factor

A.6 Lowest common multiple

A.7 HCF and LCM: word problems

A.8 Classify numbers

Integers

B.1 Integers on number lines

B.2 Graph integers on horizontal and vertical number lines

B.3 Compare and order integers

Operations with integers

C.1 Integer addition and subtraction rules

C.2 Add and subtract integers using counters

C.3 Add and subtract integers

C.4 Add and subtract three or more integers

C.5 Add and subtract integers: word problems

C.6 Integer multiplication and division rules

C.7 Multiply and divide integers

C.8 Evaluate numerical expressions involving integers

Rational numbers

D.1 Identify rational and irrational numbers

D.2 Write fractions in lowest terms

D.3 Lowest common denominator

D.4 Round decimals and mixed numbers

D.5 Convert between decimals and fractions or mixed numbers

D.6 Compare rational numbers

D.7 Put rational numbers in order

Operations with rational numbers

E.1 Reciprocals and multiplicative inverses

E.2 Add and subtract rational numbers

E.3 Add and subtract rational numbers: word problems

E.4 Apply addition and subtraction rules

E.5 Multiply and divide rational numbers

E.6 Multiply and divide rational numbers: word problems

E.7 Apply multiplication and division rules

E.8 Apply addition, subtraction, multiplication and division rules

E.9 Evaluate numerical expressions involving rational numbers

Exponents and roots

F.1 Understanding exponents

F.2 Evaluate exponents

F.3 Solve equations with variable exponents

F.4 Exponents with negative bases

F.5Exponents with decimal and fractional bases

F.6Understanding negative exponents

F.7Evaluate negative exponents

F.8Multiplication with exponents

F.9Division with exponents

F.10Multiplication and division with exponents

F.11Power rule

F.12Evaluate expressions using properties of exponents

F.13Identify equivalent expressions involving exponents

F.14Square roots of perfect squares

F.15Positive and negative square roots

F.16Estimate positive and negative square roots

F.17Relationship between squares and square roots

F.18Solve equations involving squares and square roots

F.19Cube roots of perfect cubes

F.20Estimate cube roots

F.21Solve equations involving cubes and cube roots

Scientific notation

G.1Convert between standard and scientific notation

G.2Compare numbers written in scientific notation

G.3Multiply numbers written in scientific notation

G.4Divide numbers written in scientific notation

Ratios, rates and proportions

- H.1 Understanding ratios
- H.2 Identify equivalent ratios
- H.3 Write an equivalent ratio
- H.4 Equivalent ratios: word problems
- H.5 Unit rates
- H.6 Compare ratios: word problems
- H.7 Solve proportions: word problems
- H.8 Do the ratios form a proportion?
- H.9 Do the ratios form a proportion: word problems
- H.10 Solve proportions
- H.11 Estimate population size using proportions
- H.12 Scale drawings: word problems
- H.13 Rate of change
- H.14 Constant rate of change

Proportional relationships

- I.1 Find the constant of proportionality from a table
- I.2 Write equations for proportional relationships from tables
- I.3 Identify proportional relationships by graphing
- I.4 Find the constant of proportionality from a graph
- I.5 Write equations for proportional relationships from graphs
- I.6 Identify proportional relationships
- I.7 Graph proportional relationships
- I.8 Interpret graphs of proportional relationships
- I.9 Write and solve equations for proportional relationships

Percents

J.1 Convert between percents, fractions and decimals

J.2 Compare percents to fractions and decimals

J.3 Find what percent one number is of another

J.4 Find what percent one number is of another: word problems

J.5 Estimate percents of numbers

J.6 Percents of numbers and money amounts

J.7 Percents of numbers: word problems

J.8 Compare percents of numbers

J.9 Solve percent equations

J.10 Percent of change

J.11 Percent of change: word problems

Consumer maths

K.1 Price lists

K.2 Unit prices

K.3 Unit prices: find the total price

K.4 Percent of a number: VAT, discount and more

K.5 Find the percent: discount and mark-up

K.6 Sale prices: find the original price

K.7 Multi-step problems with percents

K.8 Estimate tips

K.9 Simple interest

K.10 Compound interest

Units of measurement

L.1 Convert rates and measurements: metric units

L.2 Metric mixed units

L.3 Convert square and cubic units of length

L.4 Convert between cubic metres and litres

L.5 Precision

Problem solving

M.1 Multi-step word problems

M.2 Guess-and-check word problems

M.3 Use Venn diagrams to solve problems

M.4 Elapsed time word problems

Coordinate plane

N.1 Points on a coordinate plane

N.2 Quadrants and axes

N.3 Follow directions on a coordinate plane

Two-dimensional figures

O.1 Identify and classify polygons

O.2 Classify triangles

O.3 Identify trapeziums

O.4 Classify quadrilaterals

O.5 Graph triangles and quadrilaterals

- O.6 Properties of parallelograms
- O.7 Properties of rhombuses
- O.8 Properties of squares and rectangles
- O.9 Find missing angles in triangles and quadrilaterals
- O.10 Interior angles of polygons
- O.11 Lines, line segments and half lines
- O.12 Identify complementary, supplementary, vertical, adjacent and congruent angles
- O.13 Find measures of complementary, supplementary, vertical and adjacent angles
- O.14 Transversal of parallel lines
- O.15 Find lengths and measures of bisected line segments and angles
- O.16 Parts of a circle
- O.17 Symmetry
- O.18 Count lines of symmetry
- O.19 Draw lines of symmetry

Congruence and similarity

- P.1 Similar and congruent figures
- P.2 Side lengths and angle measures of congruent figures
- P.3 Congruence statements and corresponding parts
- P.4 Congruent triangles: SSS, SAS and ASA
- P.5 Side lengths and angle measures of similar figures

Constructions

Q.1 Construct the midpoint or perpendicular bisector of a segment

Q.2 Construct an angle bisector

Q.3 Construct a congruent angle

Q.4 Construct a perpendicular line

Q.5 Construct parallel lines

Q.6 Construct an equilateral triangle or regular hexagon

Pythagoras' theorem

R.1 Pythagoras' theorem: find the length of the hypotenuse

R.2 Pythagoras' theorem: find the missing leg length

R.3 Pythagoras' theorem: find the perimeter

R.4 Pythagoras' theorem: word problems

R.5 Converse of Pythagoras' theorem: is it a right triangle?

Three-dimensional figures

S.1 Parts of three-dimensional figures

S.2 Nets of three-dimensional figures

S.3 Front, side and top view

S.4 Base plans

S.5 Similar solids

Geometric measurement

T.1 Perimeter

T.2 Area

T.3 Area between two shapes

- T.4 Area and perimeter: word problems
- T.5 Circles, semicircles and quarter circles
- T.6 Circles: word problems
- T.7 Volume of prisms and cylinders
- T.8 Surface area of prisms and cylinders
- T.9 Volume and surface area of similar solids
- T.10 Perimeter, area and volume: changes in scale

Number sequences

- U.1 Identify arithmetic and geometric sequences
- U.2 Arithmetic sequences
- U.3 Geometric sequences
- U.4 Number sequences: mixed review
- U.5 Number sequences: word problems
- U.6 Evaluate variable expressions for number sequences
- U.7 Write variable expressions for arithmetic sequences

Expressions and properties

- V.1 Write variable expressions
- V.2 Write variable expressions from diagrams
- V.3 Write variable expressions: word problems
- V.4 Evaluate one-variable expressions
- V.5 Evaluate multi-variable expressions
- V.6 Evaluate absolute value expressions
- V.7 Evaluate radical expressions

- V.8**Evaluate rational expressions
- V.9**Identify terms and coefficients
- V.10**Sort factors of expressions
- V.11**Properties of addition and multiplication
- V.12**Multiply using the distributive property
- V.13**Simplify variable expressions using properties
- V.14**Add and subtract like terms
- V.15**Add, subtract and multiply linear expressions
- V.16**Factors of linear expressions
- V.17**Identify equivalent linear expressions

One-variable equations

- W.1**Which x satisfies an equation?
- W.2**Write an equation from words
- W.3**Model and solve equations using algebra tiles
- W.4**Write and solve equations that represent diagrams
- W.5**Properties of equality
- W.6**Solve one-step equations
- W.7**Solve two-step equations
- W.8**Solve multi-step equations
- W.9**Solve equations involving like terms
- W.10**Solve equations: complete the solution
- W.11**Solve equations: word problems

Monomials and polynomials

- X.1** Identify monomials
- X.2** Model polynomials with algebra tiles
- X.3** Add and subtract polynomials using algebra tiles
- X.4** Add and subtract polynomials
- X.5** Add polynomials to find perimeter
- X.6** Multiply monomials
- X.7** Divide monomials
- X.8** Multiply and divide monomials
- X.9** Powers of monomials
- X.10** Square and cube roots of monomials
- X.11** Multiply polynomials using algebra tiles
- X.12** Multiply polynomials
- X.13** Multiply polynomials to find area

Factorising

- Y.1** HCF of monomials
- Y.2** Factorise out a monomial
- Y.3** Factorise quadratics with leading coefficient 1
- Y.4** Factorise quadratics with other leading coefficients
- Y.5** Factorise quadratics: special cases
- Y.6** Factorise quadratics using algebra tiles
- Y.7** Factorise by grouping
- Y.8** Factorise polynomials

Data and graphs

- Z.1 Interpret tables
- Z.2 Interpret bar graphs
- Z.3 Create bar graphs
- Z.4 Interpret line graphs
- Z.5 Create line graphs
- Z.6 Interpret line plots
- Z.7 Create line plots
- Z.8 Interpret stem-and-leaf plots
- Z.9 Create stem-and-leaf plots
- Z.10 Interpret histograms
- Z.11 Create histograms
- Z.12 Create frequency charts
- Z.13 Interpret pie charts
- Z.14 Pie charts and central angles
- Z.15 Choose the best type of graph

Statistics

- AA.1 Calculate mean, median, mode and range
- AA.2 Interpret charts to find mean, median, mode and range
- AA.3 Mean, median, mode and range: find the missing number
- AA.4 Changes in mean, median, mode and range

Probability

- BB.1 Probability of simple events
- BB.2 Probability of opposite, mutually exclusive and overlapping events

BB.3 Experimental probability

BB.4 Make predictions

BB.5 Compound events: find the number of outcomes

BB.6 Counting principle