

Class VIII maths

Number theory

1. A.1

Factors

2. A.2

Divisibility rules

3. A.3

Prime or composite

4. A.4

Prime factorisation

5. A.5

Highest common factor

6. A.6

Lowest common multiple

7. A.7

HCF and LCM: word problems

8. A.8

Classify numbers

Integers

1. B.1

Integers on number lines

2. B.2

Graph integers on horizontal and vertical number lines

3. B.3

Compare and order integers

Operations with integers

1. C.1

Integer addition and subtraction rules

2. C.2

Add and subtract integers using counters

3. C.3

Add and subtract integers

4. C.4

Add and subtract three or more integers

5. C.5

Add and subtract integers: word problems

6. C.6

Integer multiplication and division rules

7. C.7

Multiply and divide integers

8. C.8

Evaluate numerical expressions involving integers

Rational numbers

1. D.1

Identify rational and irrational numbers

2. D.2

Write fractions in lowest terms

3. D.3

Lowest common denominator

4. D.4

Round decimals and mixed numbers

5. D.5

Convert between decimals and fractions or mixed numbers

6. D.6

Compare rational numbers

7. D.7

Put rational numbers in order

Operations with rational numbers

1. E.1

Reciprocals and multiplicative inverses

2. E.2

Add and subtract rational numbers

3. E.3

Add and subtract rational numbers: word problems

4. E.4

Apply addition and subtraction rules

5. E.5

Multiply and divide rational numbers

6. E.6

Multiply and divide rational numbers: word problems

7. E.7

Apply multiplication and division rules

8. E.8

Apply addition, subtraction, multiplication and division rules

9. E.9

Evaluate numerical expressions involving rational numbers

Exponents and roots

1. F.1

Understanding exponents

2. F.2

Evaluate exponents

3. F.3

Solve equations with variable exponents

4. F.4

Exponents with negative bases

5. F.5

Exponents with decimal and fractional bases

6. F.6

Understanding negative exponents

7. F.7

Evaluate negative exponents

8. F.8

Multiplication with exponents

9. F.9

Division with exponents

10. F.10

Multiplication and division with exponents

11. F.11

Power rule

12. F.12

Evaluate expressions using properties of exponents

13. F.13

Identify equivalent expressions involving exponents

14. F.14

Square roots of perfect squares

15. F.15

Positive and negative square roots

16. F.16

Estimate positive and negative square roots

17. F.17

Relationship between squares and square roots

18. F.18

Solve equations involving squares and square roots

19. F.19

Cube roots of perfect cubes

20. F.20

Estimate cube roots

21. F.21

Solve equations involving cubes and cube roots

Scientific notation

1. G.1

Convert between standard and scientific notation

2. G.2

Compare numbers written in scientific notation

3. G.3

Multiply numbers written in scientific notation

4. G.4

Divide numbers written in scientific notation

Ratios, rates and proportions

1. H.1

Understanding ratios

2. H.2

Identify equivalent ratios

3. H.3

Write an equivalent ratio

4. H.4

Equivalent ratios: word problems

5. H.5

Unit rates

6. H.6

Compare ratios: word problems

7. H.7

Solve proportions: word problems

8. H.8

Do the ratios form a proportion?

9. H.9

Do the ratios form a proportion: word problems

10. H.10

Solve proportions

11. H.11

Estimate population size using proportions

12. H.12

Scale drawings: word problems

13. H.13

Rate of change

14. H.14

Constant rate of change

Proportional relationships

1. I.1

Find the constant of proportionality from a table

2. I.2

Write equations for proportional relationships from tables

3. I.3

Identify proportional relationships by graphing

4. I.4

Find the constant of proportionality from a graph

5. I.5

Write equations for proportional relationships from graphs

6. I.6

Identify proportional relationships

7. I.7

Graph proportional relationships

8. I.8

Interpret graphs of proportional relationships

9. I.9

Write and solve equations for proportional relationships

Percents

1. J.1

Convert between percents, fractions and decimals

2. J.2

Compare percents to fractions and decimals

3. J.3

Find what percent one number is of another

4. J.4

Find what percent one number is of another: word problems

5. J.5

Estimate percents of numbers

6. J.6

Percents of numbers and money amounts

7. J.7

Percents of numbers: word problems

8. J.8

Compare percents of numbers

9. J.9

Solve percent equations

10. J.10

Percent of change

11. J.11

Percent of change: word problems

Consumer maths

1. K.1

Price lists

2. K.2

Unit prices

3. K.3

Unit prices: find the total price

4. K.4

Percent of a number: VAT, discount and more

5. K.5

Find the percent: discount and mark-up

6. K.6

Sale prices: find the original price

7. K.7

Multi-step problems with percents

8. K.8

Estimate tips

9. K.9

Simple interest

10. K.10

Compound interest

Units of measurement

1. L.1

Convert rates and measurements: metric units

2. L.2

Metric mixed units

3. L.3

Convert square and cubic units of length

4. L.4

Convert between cubic metres and litres

5. L.5

Precision

Problem solving

1. M.1

Multi-step word problems

2. M.2

Guess-and-check word problems

3. M.3

Use Venn diagrams to solve problems

4. M.4

Elapsed time word problems

Coordinate plane

1. N.1

Points on a coordinate plane

2. N.2

Quadrants and axes

3. N.3

Follow directions on a coordinate plane

Two-dimensional figures

1. O.1

Identify and classify polygons

2. O.2

Classify triangles

3. O.3

Identify trapeziums

4. O.4

Classify quadrilaterals

5. O.5

Graph triangles and quadrilaterals

6. O.6

Properties of parallelograms

7. O.7

Properties of rhombuses

8. O.8

Properties of squares and rectangles

9. O.9

Find missing angles in triangles and quadrilaterals

10. O.10

Interior angles of polygons

11. O.11

Lines, line segments and half lines

12. O.12

Identify complementary, supplementary, vertical, adjacent and congruent angles

13. O.13

Find measures of complementary, supplementary, vertical and adjacent angles

14. O.14

Transversal of parallel lines

15. O.15

Find lengths and measures of bisected line segments and angles

16. O.16

Parts of a circle

17. O.17

Symmetry

18. O.18

Count lines of symmetry

19. O.19

Draw lines of symmetry

Congruence and similarity

1. P.1

Similar and congruent figures

2. P.2

Side lengths and angle measures of congruent figures

3. P.3

Congruence statements and corresponding parts

4. P.4

Congruent triangles: SSS, SAS and ASA

5. P.5

Side lengths and angle measures of similar figures

Constructions

1. Q.1

Construct the midpoint or perpendicular bisector of a segment

2. Q.2

Construct an angle bisector

3. Q.3

Construct a congruent angle

4. Q.4

Construct a perpendicular line

5. Q.5

Construct parallel lines

6. Q.6

Construct an equilateral triangle or regular hexagon

Pythagoras' theorem

1. R.1

Pythagoras' theorem: find the length of the hypotenuse

2. R.2

Pythagoras' theorem: find the missing leg length

3. R.3

Pythagoras' theorem: find the perimeter

4. R.4

Pythagoras' theorem: word problems

5. R.5

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

Three-dimensional figures

1. S.1

Parts of three-dimensional figures

2. S.2

Nets of three-dimensional figures

3. S.3

Front, side and top view

4. S.4

Base plans

5. S.5

Similar solids

Geometric measurement

1. T.1

Perimeter

2. T.2

Area

3. T.3

Area between two shapes

4. T.4

Area and perimeter: word problems

5. T.5

Circles, semicircles and quarter circles

6. T.6

Circles: word problems

7. T.7

Volume of prisms and cylinders

8. T.8

Surface area of prisms and cylinders

9. T.9

Volume and surface area of similar solids

10. T.10

Perimeter, area and volume: changes in scale

Number sequences

1. U.1

Identify arithmetic and geometric sequences

2. U.2

Arithmetic sequences

3. U.3

Geometric sequences

4. U.4

Number sequences: mixed review

5. U.5

Number sequences: word problems

6. U.6

Evaluate variable expressions for number sequences

7. U.7

Write variable expressions for arithmetic sequences

Expressions and properties

1. V.1

Write variable expressions

2. V.2

Write variable expressions from diagrams

3. V.3

Write variable expressions: word problems

4. V.4

Evaluate one-variable expressions

5. V.5

Evaluate multi-variable expressions

6. V.6

Evaluate absolute value expressions

7. V.7

Evaluate radical expressions

8. V.8

Evaluate rational expressions

9. V.9

Identify terms and coefficients

10. V.10

Sort factors of expressions

11. V.11

Properties of addition and multiplication

12. V.12

Multiply using the distributive property

13. V.13

Simplify variable expressions using properties

14. V.14

Add and subtract like terms

15. V.15

Add, subtract and multiply linear expressions

16. V.16

Factors of linear expressions

17. V.17

Identify equivalent linear expressions

One-variable equations

1. W.1

Which x satisfies an equation?

2. W.2

Write an equation from words

3. W.3

Model and solve equations using algebra tiles

4. W.4

Write and solve equations that represent diagrams

5. W.5

Properties of equality

6. W.6

Solve one-step equations

7. W.7

Solve two-step equations

8. W.8

Solve multi-step equations

9. W.9

Solve equations involving like terms

10. W.10

Solve equations: complete the solution

11. W.11

Solve equations: word problems

Monomials and polynomials

1. X.1

Identify monomials

2. X.2

Model polynomials with algebra tiles

3. X.3

Add and subtract polynomials using algebra tiles

4. X.4

Add and subtract polynomials

5. X.5

Add polynomials to find perimeter

6. X.6

Multiply monomials

7. X.7

Divide monomials

8. X.8

Multiply and divide monomials

9. X.9

Powers of monomials

10. X.10

Square and cube roots of monomials

11. X.11

Multiply polynomials using algebra tiles

12. X.12

Multiply polynomials

13. X.13

Multiply polynomials to find area

Factorising

1. Y.1

HCF of monomials

2. Y.2

Factorise out a monomial

3. Y.3

Factorise quadratics with leading coefficient 1

4. Y.4

Factorise quadratics with other leading coefficients

5. Y.5

Factorise quadratics: special cases

6. Y.6

Factorise quadratics using algebra tiles

7. Y.7

Factorise by grouping

8. Y.8

Factorise polynomials

Data and graphs

1. Z.1

Interpret tables

2. Z.2

Interpret bar graphs

3. Z.3

Create bar graphs

4. Z.4

Interpret line graphs

5. Z.5

Create line graphs

6. Z.6

Interpret line plots

7. Z.7

Create line plots

8. Z.8

Interpret stem-and-leaf plots

9. **Z.9**

Create stem-and-leaf plots

10. **Z.10**

Interpret histograms

11. **Z.11**

Create histograms

12. **Z.12**

Create frequency charts

13. **Z.13**

Interpret pie charts

14. **Z.14**

Pie charts and central angles

15. **Z.15**

Choose the best type of graph

Statistics

1. **AA.1**

Calculate mean, median, mode and range

2. **AA.2**

Interpret charts to find mean, median, mode and range

3. **AA.3**

Mean, median, mode and range: find the missing number

4. **AA.4**

Changes in mean, median, mode and range

Probability

1. **BB.1**

Probability of simple events

2. **BB.2**

Probability of opposite, mutually exclusive and overlapping events

3. **BB.3**

Experimental probability

4. **BB.4**

Make predictions

5. **BB.5**

Compound events: find the number of outcomes

6. **BB.6**

Counting principle

Class VIII English

Reading strategies

Main idea

1. A.1

Determine the main idea of a passage

Theme

1. B.1

Match the quotations with their themes

2. B.2

Determine the themes of short stories

Author's purpose and tone

1. C.1

Identify author's purpose

2. C.2

Which sentence is more formal?

3. C.3

Compare passages for tone

Text structure

1. D.1

Compare and contrast in informational texts

2. D.2

Match causes and effects in informational texts

3. D.3

Match problems with their solutions

4. D.4

Identify text structures

Literary devices

1. E.1

Interpret figures of speech

2. E.2

Classify figures of speech

3. E.3

Analyse the effects of figures of speech on meaning and tone

Analysing literature

1. F.1

Analyse short stories

Analysing informational texts

1. G.1

Read and understand informational passages

2. G.2

Trace an argument

Comparing texts

1. H.1

Compare two texts with different genres

Visual elements

1. I.1

Compare illustrations of literary and historical subjects

Writing strategies

Organising writing

1. J.1

Order topics from broadest to narrowest

2. J.2

Organise information by main idea

3. J.3

Transitions with conjunctive adverbs

Developing and supporting arguments

1. K.1

Distinguish facts from opinions

2. K.2

Choose evidence to support a claim

3. K.3

Identify supporting details in informational texts

4. K.4

Identify supporting details in literary texts

5. K.5

Identify counterclaims

Creative techniques

1. L.1

Use personification

Active and passive voice

1. M.1

Identify active and passive voice

2. M.2

Rewrite the sentence in active voice

Editing and revising

1. N.1

Use parallel structure

2. N.2

Remove redundant words or phrases

3. N.3

Use the correct frequently confused word

4. N.4

Correct errors with frequently confused words

5. N.5

Suggest appropriate revisions

Research skills

1. O.1

Identify plagiarism

Vocabulary

Prefixes and suffixes

1. P.1

Words with pre-

2. P.2

Words with re-

3. P.3

Words with sub-

4. P.4

Words with mis-

5. P.5

Words with un-, dis-, in-, im- and non-

6. P.6

Words with -ful

7. P.7

Words with -less

8. P.8

Words with -able and -ible

Greek and Latin roots

1. Q.1

Use Greek and Latin roots as clues to the meanings of words

2. Q.2

Use words as clues to the meanings of Greek and Latin roots

3. Q.3

Determine the meanings of Greek and Latin roots

4. Q.4

Determine the meanings of words with Greek and Latin roots

Synonyms and antonyms

1. R.1

Choose the synonym

2. R.2

Choose the antonym

Word choice and usage

1. S.1

Describe the difference between related words

2. S.2

Positive and negative connotation

Homophones

1. T.1

Use the correct homophone

2. T.2

Which definition matches the sentence?

3. T.3

Which sentence matches the definition?

Analogies

1. U.1

Analogies

2. U.2

Analogies: challenge

Context clues

1. V.1

Find words using context

2. V.2

Determine the meaning of words using synonyms in context

3. V.3

Determine the meaning of words using antonyms in context

4. **V.4**

Use context to identify the meaning of a word

Domain-specific vocabulary

1. **W.1**

Determine the meaning of domain-specific words with pictures

Reference skills

1. **X.1**

Alphabetical order

2. **X.2**

Use guide words

3. **X.3**

Use dictionary entries

4. **X.4**

Use dictionary definitions

5. **X.5**

Use thesaurus entries

Grammar and mechanics

Sentences, fragments and run-ons

1. **Y.1**

Is the sentence declarative, interrogative, imperative or exclamatory?

2. **Y.2**

Identify the complete subject or complete predicate of a sentence

3. **Y.3**

Identify the simple subject or simple predicate of a sentence

4. **Y.4**

Identify the compound subject or compound predicate of a sentence

5. **Y.5**

Is it a complete sentence or a fragment?

6. **Y.6**

Is it a complete sentence or a run-on?

7. **Y.7**

Is it a complete sentence, a fragment or a run-on?

Phrases and clauses

1. **Z.1**

Is it a phrase or a clause?

2. **Z.2**

Identify appositives and appositive phrases

3. Z.3

Identify dependent and independent clauses

4. Z.4

Is the sentence simple, compound, complex or compound-complex?

5. Z.5

Combine sentences using relative clauses

Nouns

1. AA.1

Form and use plurals: review

2. AA.2

Form and use plurals of compound nouns

3. AA.3

Identify plurals, singular possessives and plural possessives

4. AA.4

Form the singular or plural possessive

5. AA.5

Identify and correct errors with plural and possessive nouns

6. AA.6

Identify and correct errors with compound and joint possession

Pronouns and antecedents

1. BB.1

Identify pronouns and their antecedents

2. BB.2

Use the pronoun that agrees with the antecedent

3. BB.3

Correct inappropriate shifts in pronoun number and person

4. BB.4

Identify vague pronoun references

5. BB.5

Identify all of the possible antecedents

Pronoun types

1. CC.1

Choose between subject and object pronouns

2. CC.2

Compound subjects and objects with 'I' and 'me'

3. CC.3

Compound subjects and objects with pronouns

4. CC.4

Choose between personal and reflexive pronouns

5. CC.5

Use reflexive pronouns

6. CC.6

Is the pronoun reflexive or intensive?

7. CC.7

Use relative pronouns: who and whom

8. CC.8

Use relative pronouns: who, whom, whose, which and that

Verb types

1. DD.1

Identify transitive and intransitive verbs

2. DD.2

Identify linking verbs, predicate adjectives and predicate nouns

Subject-verb agreement

1. EE.1

Correct errors with subject-verb agreement

2. EE.2

Correct errors with indefinite pronoun-verb agreement

3. EE.3

Use the correct verb – with compound subjects

Verb tense

1. FF.1

Irregular past tense: review

2. FF.2

Simple past, present and future tense: review

3. FF.3

Identify and correct inappropriate shifts in verb tense

4. FF.4

Form the progressive verb tenses

5. FF.5

Form the perfect verb tenses

6. FF.6

Identify participles and what they modify

7. FF.7

Identify gerunds and their functions

8. FF.8

Identify infinitives and infinitive phrases

Adjectives and adverbs

1. GG.1

Identify adjectives

2. GG.2

Order adjectives

3. GG.3

Identify adverbs

4. GG.4

Choose between adjectives and adverbs

5. GG.5

Is the word an adjective or adverb?

6. GG.6

Form and use comparative and superlative adjectives

7. GG.7

Good, better, best, bad, worse and worst

8. GG.8

Form and use comparative and superlative adverbs

9. GG.9

Well, better, best, badly, worse and worst

Prepositions

1. HH.1

Identify prepositional phrases

Direct and indirect objects

1. II.1

Is it a direct object or an indirect object?

Conjunctions

1. JJ.1

Use the correct pair of correlative conjunctions

Misplaced modifiers

1. KK.1

Misplaced modifiers with pictures

2. KK.2

Select the misplaced or dangling modifier

3. KK.3

Are the modifiers used correctly?

Restrictive and non-restrictive elements

1. LL.1

Commas with non-restrictive elements

Commas

1. MM.1

Commas with compound and complex sentences

2. MM.2

Commas with direct addresses, introductory words, interjections and interrupters

3. MM.3

Commas with coordinate adjectives

Semicolons, colons and commas

1. NN.1

Use semicolons and commas to separate clauses

2. NN.2

Use semicolons, colons and commas with lists

Dashes, hyphens and ellipses

1. OO.1

Use dashes

2. OO.2

Use hyphens in compound adjectives

3. OO.3

Decide whether ellipses are used appropriately

Capitalisation

1. PP.1

Correct capitalisation errors

2. PP.2

Capitalising titles

Formatting

1. QQ.1

Formatting titles

2. QQ.2

Formatting and capitalising titles: review