



Algebra 1 Math Skills

Here is a list of all of Algebra 1 Math Skills.

A. Numbers

1. 1
Compare and order rational numbers
2. 2
Absolute value and opposites
3. 3
Number lines
4. 4
Convert between decimals and fractions
5. 5
Convert between repeating decimals and fractions
6. 6
Square roots
7. 7
Cube roots
8. 8
Sort rational and irrational numbers
9. 9
Classify rational and irrational numbers

10.10

Classify numbers

B. Operations

1. 1

Add, subtract, multiply, and divide integers

2. 2

Evaluate numerical expressions involving integers

3. 3

Evaluate variable expressions involving integers

4. 4

Add and subtract rational numbers

5. 5

Multiply and divide rational numbers

6. 6

Evaluate numerical expressions involving rational numbers

7. 7

Evaluate variable expressions involving rational numbers

C. Ratios, rates, and proportions

1. 1

Identify equivalent ratios

2. 2

Write an equivalent ratio

3. 3

Unit rates

4. 4

Unit prices

5. 5

Solve proportions

6. 6

Solve proportions: word problems

7. 7

Scale drawings: word problems

D. Percents

1. 1

Convert between percents, fractions, and decimals

2. 2

Solve percent equations

3. 3

Percent word problems

4. 4

Percent of change

5. 5

Percent of change: word problems

6. 6

Percent of change: find the original amount word problems

7. 7

Percent of a number: tax, discount, and more

8. 8

Find the percent: tax, discount, and more

9. 9

Multi-step problems with percents

E. Measurement

1. 1
Convert rates and measurements: customary units
2. 2
Convert rates and measurements: metric units
3. 3
Unit prices with unit conversions
4. 4
Multi-step problems with unit conversions
5. 5
Precision
6. 6
Greatest possible error
7. 7
Minimum and maximum area and volume
8. 8
Percent error
9. 9
Percent error: area and volume

F. Geometry

1. 1
Perimeter
2. 2
Area
3. 3
Area and perimeter: word problems

- 4. 4
Volume
- 5. 5
Surface area
- 6. 6
Similar figures: side lengths and angle measures
- 7. 7
Similar triangles and indirect measurement
- 8. 8
Dilations and scale factors
- 9. 9
Area and perimeter of similar figures
- 10.10
Area between two shapes
- 11.11
Similar solids
- 12.12
Volume and surface area of similar solids
- 13.13
Perimeter and area: changes in scale
- 14.14
Surface area and volume: changes in scale
- 15.15
Perimeter, area, and volume: changes in scale
- 16.16
Pythagorean theorem

17.17

Pythagorean theorem: word problems

18.18

Converse of the Pythagorean theorem: is it a right triangle?

19.19

Special right triangles

G. Coordinate plane

1. 1

Coordinate plane review

2. 2

Midpoint formula: find the midpoint

3. 3

Midpoint formula: find the endpoint

4. 4

Distance between two points

H. Properties

1. 1

Properties of addition and multiplication

2. 2

Distributive property

3. 3

Simplify variable expressions using properties

4. 4

Properties of equality

5. 5

Identify equivalent equations

I. Variable expressions and equations

1. 1
Write variable expressions
2. 2
Sort factors of variable expressions
3. 3
Simplify variable expressions involving like terms and the distributive property
4. 4
Identify equivalent linear expressions
5. 5
Write variable equations
6. 6
Does x satisfy the equation?
7. 7
Which x satisfies an equation?
8. 8
Solve equations using order of operations
9. 9
Rearrange multi-variable equations

J. Solve equations

1. 1
Model and solve equations using algebra tiles
2. 2
Write and solve equations that represent diagrams
3. 3
Solve one-step linear equations

- 4. 4
Solve two-step linear equations
- 5. 5
Solve advanced linear equations
- 6. 6
Solve equations with variables on both sides
- 7. 7
Solve equations: complete the solution
- 8. 8
Find the number of solutions
- 9. 9
Create equations with no solutions or infinitely many solutions
- 10.10
Solve linear equations: word problems
- 11.11
Solve linear equations: mixed review

K. Single-variable inequalities

- 1. 1
Graph inequalities
- 2. 2
Write inequalities from graphs
- 3. 3
Identify solutions to inequalities
- 4. 4
Solve one-step linear inequalities: addition and subtraction

- 5. 5
Solve one-step linear inequalities: multiplication and division
- 6. 6
Solve one-step linear inequalities
- 7. 7
Graph solutions to one-step linear inequalities
- 8. 8
Solve two-step linear inequalities
- 9. 9
Graph solutions to two-step linear inequalities
- 10.10
Solve advanced linear inequalities
- 11.11
Graph solutions to advanced linear inequalities
- 12.12
Graph compound inequalities
- 13.13
Write compound inequalities from graphs
- 14.14
Solve compound inequalities
- 15.15
Graph solutions to compound inequalities

L. Absolute value equations and inequalities

1. 1
Solve absolute value equations
2. 2
Graph solutions to absolute value equations
3. 3
Solve absolute value inequalities
4. 4
Graph solutions to absolute value inequalities

M. Matrices

1. 1
Matrix vocabulary
2. 2
Matrix operation rules
3. 3
Add and subtract matrices
4. 4
Multiply a matrix by a scalar
5. 5
Add and subtract scalar multiples of matrices
6. 6
Multiply two matrices

N. Data and graphs

1. 1
Interpret bar graphs, line graphs, and histograms
2. 2
Create bar graphs, line graphs, and histograms
3. 3
Interpret circle graphs
4. 4
Interpret stem-and-leaf plots
5. 5
Interpret box-and-whisker plots

O. Problem solving

1. 1
Word problems: mixed review
2. 2
Word problems with money
3. 3
Consecutive integer problems
4. 4
Rate of travel: word problems
5. 5
Weighted averages: word problems

P. Number sequences

1. 1
Identify arithmetic and geometric sequences
2. 2
Arithmetic sequences
3. 3
Geometric sequences
4. 4
Evaluate variable expressions for number sequences
5. 5
Evaluate recursive formulas for sequences
6. 6
Write variable expressions for arithmetic sequences
7. 7
Write variable expressions for geometric sequences
8. 8
Write a formula for a recursive sequence
9. 9
Number sequences: mixed review

Q. Relations and functions

1. 1
Relations: convert between tables, graphs, mappings, and lists of points
2. 2
Domain and range of relations
3. 3
Identify independent and dependent variables

4. 4

Identify functions

5. 5

Identify functions: vertical line test

6. 6

Find values using function graphs

7. 7

Evaluate a function

8. 8

Evaluate a function: plug in an expression

9. 9

Complete a function table from a graph

10.10

Complete a function table from an equation

11.11

Interpret the graph of a function: word problems

12.12

Interpret functions using everyday language

13.13

Rate of change: tables

14.14

Rate of change: graphs

R. Direct and inverse variation

1. 1
Identify proportional relationships
2. 2
Find the constant of variation
3. 3
Graph a proportional relationship
4. 4
Write direct variation equations
5. 5
Write and solve direct variation equations
6. 6
Identify direct variation and inverse variation
7. 7
Write inverse variation equations
8. 8
Write and solve inverse variation equations

S. Linear functions

1. 1
Identify linear functions from graphs and equations
2. 2
Identify linear functions from tables
3. 3
Find the slope of a graph
4. 4
Find the slope from two points

- 5. 5
Find a missing coordinate using slope
- 6. 6
Slope-intercept form: find the slope and y-intercept
- 7. 7
Slope-intercept form: graph an equation
- 8. 8
Slope-intercept form: write an equation from a graph
- 9. 9
Slope-intercept form: write an equation
- 10. 10
Slope-intercept form: write an equation from a table
- 11. 11
Slope-intercept form: write an equation from a word problem
- 12. 12
Linear equations: solve for y
- 13. 13
Write linear functions to solve word problems
- 14. 14
Complete a table and graph a linear function
- 15. 15
Compare linear functions: graphs and equations
- 16. 16
Compare linear functions: tables, graphs, and equations
- 17. 17
Write equations in standard form

18.18

Standard form: find x- and y-intercepts

19.19

Standard form: graph an equation

20.20

Equations of horizontal and vertical lines

21.21

Graph a horizontal or vertical line

22.22

Point-slope form: graph an equation

23.23

Point-slope form: write an equation

24.24

Point-slope form: write an equation from a graph

25.25

Slopes of parallel and perpendicular lines

26.26

Write an equation for a parallel or perpendicular line

27.27

Transformations of linear functions

T. Linear inequalities

1. 1
Does (x, y) satisfy the inequality?
2. 2
Linear inequalities: solve for y
3. 3
Graph a two-variable linear inequality
4. 4
Linear inequalities: word problems
5. 5
Is (x, y) a solution to the system of inequalities?
6. 6
Solve systems of linear inequalities by graphing

U. Systems of linear equations

1. 1
Is (x, y) a solution to the system of equations?
2. 2
Solve a system of equations by graphing
3. 3
Solve a system of equations by graphing: word problems
4. 4
Find the number of solutions to a system of equations by graphing
5. 5
Find the number of solutions to a system of equations
6. 6
Classify a system of equations by graphing

7. 7

Classify a system of equations

8. 8

Solve a system of equations using substitution

9. 9

Solve a system of equations using substitution: word problems

10.10

Solve a system of equations using elimination

11.11

Solve a system of equations using elimination: word problems

12.12

Solve a system of equations using augmented matrices

13.13

Solve a system of equations using augmented matrices: word problems

14.14

Solve a system of equations using any method

15.15

Solve a system of equations using any method: word problems

V. Exponents

1. 1

Exponents with integer bases

2. 2

Exponents with decimal and fractional bases

3. 3

Negative exponents

4. 4

Multiplication with exponents

5. 5

Division with exponents

6. 6

Multiplication and division with exponents

7. 7

Power rule

8. 8

Evaluate expressions using properties of exponents

9. 9

Identify equivalent expressions involving exponents I

10.10

Identify equivalent expressions involving exponents II

11.11

Evaluate integers raised to rational exponents

W.Scientific notation

1. 1

Convert between standard and scientific notation

2. 2

Compare numbers written in scientific notation

3. 3

Multiply numbers written in scientific notation

4. 4

Divide numbers written in scientific notation

X. Exponential functions

1. 1
Evaluate an exponential function
2. 2
Match exponential functions and graphs
3. 3
Domain and range of exponential functions: graphs
4. 4
Domain and range of exponential functions: equations
5. 5
Exponential growth and decay: word problems

Y. Monomials

1. 1
Identify monomials
2. 2
Multiply monomials
3. 3
Divide monomials
4. 4
Multiply and divide monomials
5. 5
Powers of monomials

Z. Polynomials

1. 1
Polynomial vocabulary
2. 2
Model polynomials with algebra tiles
3. 3
Add and subtract polynomials using algebra tiles
4. 4
Add and subtract polynomials
5. 5
Add polynomials to find perimeter
6. 6
Multiply a polynomial by a monomial
7. 7
Multiply two polynomials using algebra tiles
8. 8
Multiply two binomials
9. 9
Multiply two binomials: special cases
10. 10
Multiply polynomials

AA. Factoring

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

BB. Quadratic equations

1. 1
Characteristics of quadratic functions: graphs
2. 2
Characteristics of quadratic functions: equations
3. 3
Complete a function table: quadratic functions
4. 4
Transformations of quadratic functions

5. 5

Graph quadratic functions in vertex form

6. 6

Solve a quadratic equation using square roots

7. 7

Solve a quadratic equation using the zero product property

8. 8

Solve a quadratic equation by factoring

9. 9

Complete the square

10.10

Solve a quadratic equation by completing the square

11.11

Solve a quadratic equation using the quadratic formula

12.12

Using the discriminant

13.13

Match quadratic functions and graphs

14.14

Write a quadratic function from its vertex and another point

15.15

Systems of linear and quadratic equations

CC.Functions: linear, quadratic, exponential

1. 1
Identify linear, quadratic, and exponential functions from graphs
2. 2
Identify linear, quadratic, and exponential functions from tables
3. 3
Write linear, quadratic, and exponential functions
4. 4
Linear functions over unit intervals
5. 5
Exponential functions over unit intervals
6. 6
Describe linear and exponential growth and decay

DD.Absolute value functions

1. 1
Complete a function table: absolute value functions
2. 2
Graph an absolute value function
3. 3
Domain and range of absolute value functions: graphs
4. 4
Domain and range of absolute value functions: equations
5. 5
Transformations of absolute value functions

EE. Radical expressions

1. 1
Simplify radical expressions
2. 2
Simplify radical expressions with variables
3. 3
Simplify radical expressions involving fractions
4. 4
Multiply radical expressions
5. 5
Add and subtract radical expressions
6. 6
Simplify radical expressions using the distributive property
7. 7
Divide radical expressions
8. 8
Simplify radical expressions: mixed review

FF. Radical functions and equations

1. 1
Evaluate a radical function
2. 2
Domain and range of radical functions: graphs
3. 3
Domain and range of radical functions: equations
4. 4
Solve radical equations I
5. 5
Solve radical equations II

GG. Rational functions and expressions

1. 1
Rational functions: asymptotes and excluded values
2. 2
Simplify complex fractions
3. 3
Simplify rational expressions
4. 4
Multiply and divide rational expressions
5. 5
Divide polynomials by monomials
6. 6
Divide polynomials using long division
7. 7
Add and subtract rational expressions

8. 8
Solve rational equations

9. 9
Evaluate rational expressions

HH. Trigonometry

1. 1
Trigonometric ratios: sin, cos, and tan

2. 2
Find trigonometric ratios using a calculator

3. 3
Inverses of trigonometric functions

4. 4
Trigonometric ratios: find a side length

5. 5
Trigonometric ratios: find an angle measure

6. 6
Solve a right triangle

II. Logic

1. 1
Identify hypotheses and conclusions

2. 2
Counterexamples

JJ. Probability

1. 1
Theoretical probability
2. 2
Experimental probability
3. 3
Outcomes of compound events
4. 4
Identify independent and dependent events
5. 5
Probability of independent and dependent events
6. 6
Counting principle
7. 7
Permutations
8. 8
Permutation and combination notation

KK. Statistics

1. 1
Identify biased samples
2. 2
Mean, median, mode, and range
3. 3
Quartiles
4. 4
Identify an outlier

- 5. 5
Identify an outlier and describe the effect of removing it
- 6. 6
Mean absolute deviation
- 7. 7
Variance and standard deviation
- 8. 8
Interpret a scatter plot
- 9. 9
Outliers in scatter plots
- 10.10
Match correlation coefficients to scatter plots
- 11.11
Calculate correlation coefficients
- 12.12
Scatter plots: line of best fit
- 13.13
Find the equation of a regression line
- 14.14
Interpret regression lines
- 15.15
Analyze a regression line of a data set