Functions

A.1 Domain and range

A.2 Identify functions

A.3 Linear functions

A.4 Linear functions over unit intervals

A.5 Evaluate functions

A.6 Find values using function graphs

A.7 Complete a table for a function graph

A.8 Add, subtract, multiply, and divide functions

A.9 Composition of functions

A.10 Identify inverse functions

A.11 Find values of inverse functions from tables

A.12 Find values of inverse functions from graphs

A.13 Find inverse functions and relations

Families of functions

B.1 Translations of functions

B.2 Reflections of functions

B.3 Dilations of functions

B.4 Transformations of functions

B.5 Function transformation rules

B.6 Describe function transformations

Quadratic functions

C.1 Characteristics of quadratic functions

C.2 Find the maximum or minimum value of a quadratic function

C.3 Graph a quadratic function

C.4 Match quadratic functions and graphs

C.5 Solve a quadratic equation using square roots

C.6 Solve a quadratic equation by factoring

C.7 Solve a quadratic equation by completing the square

C.8 Solve a quadratic equation using the quadratic formula

C.9 Using the discriminant

Polynomials

D.1 Divide polynomials using long division

D.2 Divide polynomials using synthetic division

D.3 Evaluate polynomials using synthetic division

D.4 Write a polynomial from its roots

D.5 Find the roots of factored polynomials

D.6 Rational root theorem

D.7 Complex conjugate theorem

D.8 Conjugate root theorems

D.9 Descartes' Rule of Signs

D.10 Fundamental Theorem of Algebra

D.11 Match polynomials and graphs

D.12 Factor sums and differences of cubes

D.13 Solve equations with sums and differences of cubes

D.14 Factor using a quadratic pattern

D.15 Solve equations using a quadratic pattern

D.16 Pascal's triangle

Systems of inequalities

J.1 Solve systems of linear inequalities by graphing

J.2 Solve systems of linear and absolute value inequalities by graphing

J.3 Find the vertices of a solution set

J.4 Linear programming

Nonlinear inequalities

K.1 Graph solutions to quadratic inequalities

K.2 Solve quadratic inequalities

K.3 Graph solutions to higher-degree inequalities

K.4 Solve higher-degree inequalities

Matrices

L.1 Matrix vocabulary

L.2 Matrix operation rules

L.3 Add and subtract matrices

L.4 Multiply a matrix by a scalar

L.5 Linear combinations of matrices

L.6 Multiply two matrices

L.7 Simplify matrix expressions

L.8 Solve matrix equations

L.9 Determinant of a matrix

L.10 Is a matrix invertible?

L.11 Inverse of a 2 x 2 matrix

L.12 Inverse of a 3 x 3 matrix

L.13 Identify inverse matrices

L.14 Solve matrix equations using inverses

Trigonometry

M.1 Convert between radians and degrees

M.2 Radians and arc length

M.3 Quadrants

M.4 Coterminal and reference angles

M.5 Find trigonometric ratios using right triangles

M.6 Find trigonometric ratios using the unit circle

M.7 Find trigonometric ratios using reference angles

M.8 Inverses of trigonometric functions

M.9 Solve trigonometric equations

M.10 Trigonometric ratios: find a side length

M.11 Trigonometric ratios: find an angle measure

M.12 Solve a right triangle

M.13 Law of Sines

M.14 Law of Cosines

M.15 Solve a triangle

M.16 Area of a triangle: sine formula

M.17 Area of a triangle: Heron's formula

Trigonometric functions

N.1 Find properties of sine functions

N.2 Write equations of sine functions from graphs

N.3 Write equations of sine functions using

Two-dimensional vectors

U.1 Find the magnitude of a vector

U.2 Find the direction angle of a vector

U.3 Find the component form of a vector

U.4 Find the component form of a vector from its magnitude and direction angle

U.5 Find a unit vector

U.6 Add and subtract vectors

U.7 Multiply a vector by a scalar

U.8 Find the magnitude or direction of a vector scalar multiple

U.9 Find the magnitude and direction of a vector sum

U.10 Linear combinations of vectors

U.11 Graph a resultant vector using the triangle method

U.12 Graph a resultant vector using the parallelogram method

Three-dimensional vectors

V.1 Find the magnitude of a three-dimensional vector

V.2 Find the component form of a three-dimensional vector

V.3 Find a three-dimensional unit vector

V.4 Add and subtract three-dimensional vectors

V.5 Scalar multiples of three-dimensional vectors

V.6 Linear combinations of three-dimensional vectors

Sequences and series

W.1 Find terms of a sequence

W.2 Find terms of a recursive sequence

W.3 Identify a sequence as explicit or recursive

W.4 Find a recursive formula

W.5 Find recursive and explicit formulas

W.6 Convert a recursive formula to an explicit formula

W.7 Convert an explicit formula to a recursive formula

W.8 Convert between explicit and recursive formulas

W.9 Introduction to sigma notation

W.10 Identify arithmetic and geometric series

W.11 Find the sum of a finite arithmetic or geometric series

W.12 Introduction to partial sums

W.13 Partial sums of arithmetic series

W.14 Partial sums of geometric series

W.15 Partial sums: mixed review

W.16 Convergent and divergent geometric series

W.17 Find the value of an infinite geometric series

W.18 Write a repeating decimal as a fraction

Probability

X.1 Introduction to probability

X.2 Calculate probabilities of events