Correlation of the ALEKS course Algebra 2 to the ACT College Readiness Standards for Mathematics

Standard 1 : Basic Operations and Applications

- = ALEKS course topic that addresses the standard
TD = Teacher Directed

1.1: Perform one-operation computation with whole numbers and decimals
    TD

1.2: Solve problems in one or two steps using whole numbers
    TD

1.3: Perform common conversions (e.g., inches to feet or hours to minutes)
    TD

1.4: Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent
   - Word problem on unit rates associated with ratios of whole numbers: Decimal answers

1.5: Solve some routine two-step arithmetic problems
   - Finding the sale price without a calculator given the original price and percent discount
   - Computing a percentage from a table of values

1.6: Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average
   - Solving a word problem involving rates and time conversion
   - Finding the sale price without a calculator given the original price and percent discount
   - Finding the original price given the sale price and percent discount
   - Finding simple interest without a calculator
   - Finding the value for a new score that will yield a given mean
   - Word problem on proportions: Problem type 1
   - Word problem on proportions: Problem type 2

1.7: Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)
    TD

1.8: Solve word problems containing several rates, proportions, or percentages
   - Computations from a circle graph
   - Computing a percentage from a table of values
   - Word problem involving multiple rates
1.9: Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)

- Finding the percentage increase or decrease: Advanced
- Circumference ratios
- Similar polygons
- Indirect measurement

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**Standard 2: Probability, Statistics, and Data Analysis**

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2.1: Calculate the average of a list of positive whole numbers

TD

2.2: Perform a single computation using information from a table or chart

- Finding the mode and range of a data set

2.3: Calculate the average of a list of numbers

TD

2.4: Calculate the average, given the number of data values and the sum of the data values

TD

2.5: Read tables and graphs

TD

2.6: Perform computations on data from tables and graphs

- Computations from a circle graph
- Computing a percentage from a table of values
- Interpreting the graphs of two functions
- Finding the mode and range of a data set

2.7: Use the relationship between the probability of an event and the probability of its complement

TD

2.8: Calculate the missing data value, given the average and all data values but one

- Finding the value for a new score that will yield a given mean

2.9: Translate from one representation of data to another (e.g., a bar graph to a circle graph)

TD
2.10: Determine the probability of a simple event
TD

2.11: Exhibit knowledge of simple counting techniques
TD

2.12: Calculate the average, given the frequency counts of all the data values
  - Weighted mean

2.13: Manipulate data from tables and graphs
  - Computations from a circle graph
  - Computing a percentage from a table of values

2.14: Compute straightforward probabilities for common situations
  - Probability of an event

2.15: Use Venn diagrams in counting
TD

2.16: Calculate or use a weighted average
  - Weighted mean

2.17: Interpret and use information from figures, tables, and graphs
  - Computations from a circle graph
  - Computing a percentage from a table of values
  - Choosing a graph to fit a narrative: Advanced
  - Interpreting the graphs of two functions
  - Finding the mode and range of a data set

2.18: Apply counting techniques
  - Counting principle
  - Introduction to permutations and combinations
  - Permutations and combinations: Problem type 1
  - Permutations and combinations: Problem type 2
  - Permutations and combinations: Problem type 3

2.19: Compute a probability when the event and/or sample space are not given or obvious
  - Probabilities involving two dice
  - Experimental and theoretical probability
  - Area as probability

2.20: Distinguish between mean, median, and mode for a list of numbers
  - Mode of a data set
  - Mean and median of a data set

2.21: Analyze and draw conclusions based on information from figures, tables, and graphs
  - Computations from a circle graph
• Computing a percentage from a table of values
• Choosing a graph to fit a narrative: Advanced
• Interpreting the graphs of two functions

2.22: Exhibit knowledge of conditional and joint probability
• Probability of independent events
• Probability of dependent events

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**Standard 3 : Numbers - Concepts and Properties**

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3.1: Recognize equivalent fractions and fractions in lowest terms
   TD

3.2: Recognize one-digit factors of a number
   TD

3.3: Identify a digit's place value
   TD

3.4: Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor
   • Absolute value of a number

3.5: Find and use the least common multiple
   TD

3.6: Order fractions
   TD

3.7: Work with numerical factors
   TD

3.8: Work with scientific notation
   • Scientific notation with positive exponent
   • Scientific notation with negative exponent
   • Multiplying and dividing numbers written in scientific notation

3.9: Work with squares and square roots of numbers
   • Exponents and integers: Problem type 1
   • Exponents and integers: Problem type 2
   • Square root of a perfect square
   • Square root of a rational perfect square
   • Simplifying the square root of a whole number less than 100
3.10: Work problems involving positive integer exponents
- Exponents and integers: Problem type 1
- Exponents and integers: Problem type 2
- Exponents and signed fractions
- Order of operations with integers and exponents
- Evaluating expressions with exponents of zero

3.11: Work with cubes and cube roots of numbers
- Exponents and integers: Problem type 1
- Exponents and integers: Problem type 2
- Exponents and signed fractions
- Cube root of an integer

3.12: Determine when an expression is undefined
- Restriction on a variable in a denominator: Linear

3.13: Exhibit some knowledge of the complex numbers
- Using $i$ to rewrite square roots of negative numbers

3.14: Apply number properties involving prime factorization
TD

3.15: Apply number properties involving even/odd numbers and factors/multiples
TD

3.16: Apply number properties involving positive/negative numbers
- Ordering integers
- Integer addition: Problem type 2
- Integer subtraction
- Integer multiplication and division
- Distributive property: Whole number coefficients
- Distributive property: Integer coefficients
- Properties of addition
- Properties of real numbers

3.17: Apply rules of exponents
- Evaluating an expression with a negative exponent: Positive fraction base
- Evaluating an expression with a negative exponent: Negative integer base
- Rewriting an algebraic expression without a negative exponent
- Understanding the product rule of exponents
- Introduction to the product rule of exponents
- Product rule with negative exponents
- Quotient of expressions involving exponents
- Quotient rule with negative exponents: Problem type 1
- Understanding the power rules of exponents
- Introduction to the power rules of exponents
- Power rules with positive exponents
- Power of a power rule with negative exponents
- Power rules with negative exponents
- Power and product rules with positive exponents
• Power, product, and quotient rules with negative exponents

3.18: Multiply two complex numbers
• Multiplying complex numbers

3.19: Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers
• Evaluating a linear expression: Integer multiplication with addition or subtraction
• Evaluating a quadratic expression: Integers
• Ordering numbers with positive exponents
• Ordering numbers with negative exponents
• Ordering fractions with variables
• Identifying numbers as integers or non-integers
• Identifying numbers as rational or irrational
• Distributive property: Whole number coefficients
• Distributive property: Integer coefficients
• Properties of addition
• Properties of real numbers

3.20: Exhibit knowledge of logarithms and geometric sequences
• Converting between logarithmic and exponential equations
• Converting between natural logarithmic and exponential equations
• Evaluating a logarithmic expression
• Basic properties of logarithms
• Writing an expression as a single logarithm
• Expanding a logarithmic expression: Problem type 1
• Expanding a logarithmic expression: Problem type 2
• Change of base for logarithms: Problem type 1
• Arithmetic and geometric sequences: Identifying and writing an explicit rule

3.21: Apply properties of complex numbers
• Using $i$ to rewrite square roots of negative numbers
• Simplifying a product and quotient involving square roots of negative numbers
• Adding or subtracting complex numbers
• Multiplying complex numbers
• Dividing complex numbers
• Simplifying a power of $i$

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**Standard 4**: Expressions, Equations, and Inequalities

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4.1: Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)
• Writing a one-step variable expression for a real-world situation

4.2: Solve equations in the form $x + a = b$, where $a$ and $b$ are whole numbers or decimals
4.3: Substitute whole numbers for unknown quantities to evaluate expressions

4.4: Solve one-step equations having integer or decimal answers
- Additive property of equality with integers
- Multiplicative property of equality with whole numbers
- Multiplicative property of equality with integers
- Multiplicative property of equality with signed fractions

4.5: Combine like terms (e.g., 2x + 5x)
- Combining like terms: Integer coefficients
- Combining like terms in a quadratic expression

4.6: Evaluate algebraic expressions by substituting integers for unknown quantities
- Evaluating a linear expression: Integer multiplication with addition or subtraction
- Evaluating a quadratic expression: Integers

4.7: Add and subtract simple algebraic expressions
- Combining like terms: Advanced
- Simplifying a sum or difference of two univariate polynomials
- Simplifying a sum or difference of three univariate polynomials

4.8: Solve routine first-degree equations
- Additive property of equality with integers
- Additive property of equality with a negative coefficient
- Multiplicative property of equality with whole numbers
- Multiplicative property of equality with integers
- Multiplicative property of equality with signed fractions
- Solving a two-step equation with integers
- Solving a two-step equation with signed fractions
- Solving a two-step equation with signed decimals
- Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
- Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients
- Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution
- Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions
- Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators
- Solving equations with zero, one, or infinitely many solutions

4.9: Perform straightforward word-to-symbol translations
- Writing a one-step variable expression for a real-world situation
- Translating a sentence into a one-step equation
- Translating a phrase into a two-step expression
- Translating a sentence by using an inequality symbol
• Writing an inequality for a real-world situation

4.10: Multiply two binomials
• Multiplying binomials with leading coefficients of 1
• Multiplying conjugate binomials: Univariate
• Multiplying binomials in two variables
• Squaring a binomial: Univariate

4.11: Solve real-world problems using first-degree equations
• Solving a fraction word problem using a linear equation of the form $Ax = B$
• Solving a word problem with two unknowns using a linear equation
• Solving a decimal word problem using a linear equation with the variable on both sides
• Solving a decimal word problem using a linear equation of the form $Ax + B = C$
• Solving a fraction word problem using a linear equation with the variable on both sides
• Solving a value mixture problem using a linear equation
• Solving a percent mixture problem using a linear equation
• Solving a distance, rate, time problem using a linear equation
• Finding the value for a new score that will yield a given mean

4.12: Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)
• Solving a word problem involving rates and time conversion
• Finding the original price given the sale price and percent discount
• Word problem on proportions: Problem type 1
• Word problem on proportions: Problem type 2

4.13: Identify solutions to simple quadratic equations
• Finding the roots of a quadratic equation with leading coefficient 1
• Finding the roots of a quadratic equation with leading coefficient greater than 1
• Solving an equation written in factored form

4.14: Add, subtract, and multiply polynomials
• Product rule with positive exponents: Multivariate
• Simplifying a sum or difference of two univariate polynomials
• Simplifying a sum or difference of three univariate polynomials
• Multiplying a univariate polynomial by a monomial with a positive coefficient
• Multiplying a multivariate polynomial by a monomial
• Multiplying binomials with leading coefficients of 1
• Multiplying conjugate binomials: Univariate
• Multiplying binomials in two variables
• Squaring a binomial: Univariate
• Multiplication involving binomials and trinomials in two variables

4.15: Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
• Factoring a quadratic with leading coefficient 1
• Factoring a perfect square trinomial
• Factoring a quadratic with leading coefficient greater than 1
• Factoring a quadratic in two variables with leading coefficient greater than 1
• Factoring a difference of squares

4.16: Solve first-degree inequalities that do not require reversing the inequality sign
• Solving a linear inequality: Problem type 1
• Solving a linear inequality: Problem type 2
• Solving a linear inequality: Problem type 4

4.17: Manipulate expressions and equations
• Introduction to algebraic symbol manipulation
• Algebraic symbol manipulation: Problem type 1
• Algebraic symbol manipulation: Problem type 2

4.18: Write expressions, equations, and inequalities for common algebra settings
• Translating a sentence into a one-step equation
• Writing a multi-step equation for a real-world situation
• Solving a fraction word problem using a linear equation of the form Ax = B
• Solving a word problem with two unknowns using a linear equation
• Solving a decimal word problem using a linear equation with the variable on both sides
• Solving a decimal word problem using a linear equation of the form Ax + B = C
• Solving a fraction word problem using a linear equation with the variable on both sides
• Solving a value mixture problem using a linear equation
• Solving a percent mixture problem using a linear equation
• Solving a distance, rate, time problem using a linear equation
• Finding the value for a new score that will yield a given mean
• Writing a multi-step inequality for a real-world situation
• Solving a decimal word problem using a two-step linear inequality
• Solving a decimal word problem using a linear inequality with the variable on both sides
• Writing an equation and drawing its graph to model a real-world situation: Advanced
• Solving a word problem using a quadratic equation with rational roots
• Finding a final amount in a word problem on exponential growth or decay

4.19: Solve linear inequalities that require reversing the inequality sign
• Solving a linear inequality: Problem type 3
• Solving a linear inequality: Problem type 5

4.20: Solve absolute value equations
• Solving an absolute value equation of the form a|x| = b or |x|+a = b
• Solving an absolute value equation of the form |ax+b| = c

4.21: Solve quadratic equations
• Finding the roots of a quadratic equation with leading coefficient 1
• Finding the roots of a quadratic equation with leading coefficient greater than 1
• Solving a quadratic equation needing simplification
• Solving a quadratic equation using the square root property: Exact answers, basic
• Solving a quadratic equation using the square root property: Exact answers, advanced
• Solving a quadratic equation by completing the square: Exact answers
• Applying the quadratic formula: Exact answers
• Solving an equation written in factored form

4.22: Find solutions to systems of linear equations
- Classifying systems of linear equations from graphs
- Graphically solving a system of linear equations
- Solving a system of linear equations using substitution
- Solving a system of linear equations using elimination with multiplication and addition
- Solving a 2x2 system of linear equations that is inconsistent or consistent dependent
- Solving a 3x3 system of linear equations: Problem type 1

4.23: Write expressions that require planning and/or manipulating to accurately model a situation
- Writing a one-step variable expression for a real-world situation
- Translating a phrase into a two-step expression

4.24: Write equations and inequalities that require planning, manipulating, and/or solving
- Translating a sentence into a one-step equation
- Writing a multi-step equation for a real-world situation
- Solving a fraction word problem using a linear equation of the form \( Ax = B \)
- Solving a word problem with two unknowns using a linear equation
- Solving a decimal word problem using a linear equation with the variable on both sides
- Solving a decimal word problem using a linear equation of the form \( Ax + B = C \)
- Solving a fraction word problem using a linear equation with the variable on both sides
- Solving a value mixture problem using a linear equation
- Solving a percent mixture problem using a linear equation
- Solving a distance, rate, time problem using a linear equation
- Finding the value for a new score that will yield a given mean
- Writing a multi-step inequality for a real-world situation
- Solving a decimal word problem using a two-step linear inequality
- Solving a decimal word problem using a linear inequality with the variable on both sides
- Writing an equation and drawing its graph to model a real-world situation: Advanced
- Solving a word problem using a quadratic equation with rational roots
- Finding a final amount in a word problem on exponential growth or decay

4.25: Solve simple absolute value inequalities
- Solving an absolute value inequality: Basic
- Solving an absolute value inequality: Advanced

**Standard 5 : Graphical Representations**

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5.1: Identify the location of a point with a positive coordinate on the number line
- Fractional position on a number line

5.2: Locate points on the number line and in the first quadrant
- Plotting integers on a number line
- Plotting rational numbers on a number line

5.3: Locate points in the coordinate plane
• Reading a point in the coordinate plane
• Plotting a point in the coordinate plane

5.4: Comprehend the concept of length on the number line

5.5: Exhibit knowledge of slope
• Graphing a line through a given point with a given slope
• Finding slope given the graph of a line on a grid

5.6: Identify the graph of a linear inequality on the number line
• Graphing a linear inequality on the number line
• Writing an inequality given a graph on the number line

5.7: Determine the slope of a line from points or equations
• Finding slope given two points on the line
• Finding the slope of a line given its equation

5.8: Match linear graphs with their equations
• Graphing a line given its equation in slope-intercept form
• Graphing a line given its equation in standard form
• Graphing a vertical or horizontal line
• Writing an equation of a line given the y-intercept and another point
• Writing the equation of the line through two given points
• Writing the equations of vertical and horizontal lines through a given point

5.9: Find the midpoint of a line segment
• Midpoint of a line segment in the plane

5.10: Interpret and use information from graphs in the coordinate plane
• Finding slope given the graph of a line on a grid
• Writing an equation of a line given the y-intercept and another point
• Writing the equation of the line through two given points
• Scatter plots and correlation
• Finding intercepts of a nonlinear function given its graph
• Interpreting the graphs of two functions

5.11: Match number line graphs with solution sets of linear inequalities
• Graphing a linear inequality on the number line
• Writing an inequality given a graph on the number line

5.12: Use the distance formula
• Distance between two points in the plane: Exact answers

5.13: Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
• Writing equations of lines parallel and perpendicular to a given line through a point

5.14: Recognize special characteristics of parabolas and circles (e.g., the vertex of a
parabola and the center or radius of a circle)
- Rewriting a quadratic function to find the vertex of its graph
- Graphing a parabola of the form $y = (x-h)^2 + k$
- Graphing a circle given its equation in standard form

5.15: Match number line graphs with solution sets of simple quadratic inequalities
- Solving a quadratic inequality written in factored form

5.16: Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
- Finding the y-intercept of a line given its equation
- Finding x- and y-intercepts of a line given the equation: Advanced
- Finding slope given two points on the line
- Finding the slope of a line given its equation
- Graphing a parabola of the form $y = ax^2$
- Graphing an absolute value equation in the plane: Advanced
- Finding the x-intercept(s) and the vertex of a parabola
- Rewriting a quadratic function to find the vertex of its graph
- Finding the maximum or minimum of a quadratic function
- Graphing a parabola of the form $y = (x-h)^2 + k$
- Graphing a parabola of the form $y = ax^2 + bx + c$: Integer coefficients
- Classifying the graph of a function
- How the leading coefficient affects the shape of a parabola
- Finding x- and y-intercepts given a polynomial function
- Determining the end behavior of the graph of a polynomial function
- Matching graphs with polynomial functions
- Graphing an exponential function and its asymptote: $f(x) = a(e)^{x-b} + c$
- Graphing a logarithmic function: Basic
- The graph, domain, and range of a logarithmic function
- Graphing a logarithmic function: Advanced
- Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator

5.17: Solve problems integrating multiple algebraic and/or geometric concepts
- Writing an equation and drawing its graph to model a real-world situation: Advanced
- Application problem with a linear function: Finding a coordinate given the slope and a point
- Application problem with a linear function: Finding a coordinate given two points
- Finding slopes of lines parallel and perpendicular to a line given in the form $Ax + By = C$
- Writing equations of lines parallel and perpendicular to a given line through a point
- Writing an equation for a function after a vertical translation
- Writing an equation for a function after a vertical and horizontal translation
- Translating the graph of a function: One step
- Translating the graph of a function: Two steps
- Graphing a piecewise-defined function: Problem type 1
- Choosing a graph to fit a narrative: Advanced
- Word problem involving the maximum or minimum of a quadratic function
- Writing an equation of a circle given its center and a point on the circle
- Writing an equation of a circle given the endpoints of a diameter
5.18: Analyze and draw conclusions based on information from graphs in the coordinate plane

- Finding slope given the graph of a line on a grid
- Writing an equation of a line given the y-intercept and another point
- Writing the equation of the line through two given points
- Scatter plots and correlation
- Finding inputs and outputs of a function from its graph
- Finding intercepts of a nonlinear function given its graph
- Finding where a function is increasing, decreasing, or constant given the graph: Interval notation
- Finding local maxima and minima of a function given the graph
- Interpreting the graphs of two functions
- How the leading coefficient affects the shape of a parabola
- Writing the equation of a quadratic function given its graph
- Inferring properties of a polynomial function from its graph

Standard 6 : Properties of Plane Figures

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6.1: Exhibit some knowledge of the angles associated with parallel lines
    TD

6.2: Find the measure of an angle using properties of parallel lines
    TD

6.3: Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
    - Solving equations involving vertical angles and linear pairs

6.4: Use several angle properties to find an unknown angle measure
    - Solving equations involving vertical angles and linear pairs

6.5: Recognize Pythagorean triples
    TD

6.6: Use properties of isosceles triangles
    - Finding angle measures of a right or isosceles triangle given angles with variables

6.7: Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
    - Indirect measurement
    - Special right triangles: Exact answers

6.8: Use the Pythagorean theorem
    - Pythagorean Theorem

6.9: Draw conclusions based on a set of conditions
    TD
6.10: Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas

- Finding a side length given the perimeter and side lengths with variables
- Finding the side length of a rectangle given its perimeter or area
- Finding the perimeter or area of a rectangle given one of these values
- Circumference ratios
- Word problem involving the area between two concentric circles
- Word problem involving the rate of filling or emptying a cylinder
- Ratio of volumes
- Finding angle measures of a right or isosceles triangle given angles with variables
- Similar polygons

6.11: Use relationships among angles, arcs, and distances in a circle

TD

Standard 7 : Measurement

- = ALEKS course topic that addresses the standard
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7.1: Estimate or calculate the length of a line segment based on other lengths given on a geometric figure

TD

7.2: Compute the perimeter of polygons when all side lengths are given

- Perimeter of a square or a rectangle

7.3: Compute the area of rectangles when whole number dimensions are given

- Area of a square or a rectangle

7.4: Compute the area and perimeter of triangles and rectangles in simple problems

- Perimeter of a square or a rectangle
- Area of a square or a rectangle
- Area of a triangle

7.5: Use geometric formulas when all necessary information is given

- Area of a square or a rectangle
- Area of a triangle
- Circumference and area of a circle
- Volume of a rectangular prism
- Volume of a cylinder

7.6: Compute the area of triangles and rectangles when one or more additional simple steps are required

TD

7.7: Compute the area and circumference of circles after identifying necessary information
• Circumference and area of a circle

7.8: Compute the perimeter of simple composite geometric figures with unknown side lengths
  TD

7.9: Use relationships involving area, perimeter, and volume of geometric figures to compute another measure
  • Sides of polygons having the same perimeter
  • Finding the side length of a rectangle given its perimeter or area
  • Finding the perimeter or area of a rectangle given one of these values

7.10: Use scale factors to determine the magnitude of a size change
  TD

7.11: Compute the area of composite geometric figures when planning or visualization is required
  • Word problem involving the area between two concentric circles

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Standard 8 : Functions

• = ALEKS course topic that addresses the standard

8.1: Evaluate quadratic functions, expressed in function notation, at integer values
  • Evaluating functions: Linear and quadratic or cubic

8.2: Evaluate polynomial functions, expressed in function notation, at integer values
  • Evaluating functions: Linear and quadratic or cubic

8.3: Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
  • Sine, cosine, and tangent ratios: Variables for side lengths

8.4: Evaluate composite functions at integer values
  • Composition of two functions: Basic

8.5: Apply basic trigonometric ratios to solve right-triangle problems
  • Finding trigonometric ratios given a right triangle
  • Using a trigonometric ratio to find a side length in a right triangle
  • Using trigonometry to find distances
  • Using a trigonometric ratio to find an angle measure in a right triangle
  • Using trigonometry to find angles of elevation or depression
  • Solving a right triangle

8.6: Write an expression for the composite of two simple functions
  • Composition of two functions: Advanced
8.7: Use trigonometric concepts and basic identities to solve problems
- Trigonometric functions and special angles: Problem type 2
- Solving a triangle with the law of sines: Problem type 1
- Solving a triangle with the law of sines: Problem type 2
- Solving a triangle with the law of cosines
- Solving a word problem using the law of cosines
- Word problem involving a sine or cosine function: Problem type 1
- Simplifying trigonometric expressions
- Using cofunction identities
- Sum and difference identities: Problem type 3

8.8: Exhibit knowledge of unit circle trigonometry
- Finding coordinates on the unit circle for special angles
- Determining the location of a terminal point given the signs of trigonometric values
- Trigonometric functions and special angles: Problem type 1
- Trigonometric functions and special angles: Problem type 2
- Trigonometric functions and special angles: Problem type 3

8.9: Match graphs of basic trigonometric functions with their equations
- Writing the equation of a sine or cosine function given its graph: Problem type 1
- Writing the equation of a sine or cosine function given its graph: Problem type 2
- Sketching the graph of a sine or cosine function: Problem type 1
- Sketching the graph of a sine or cosine function: Problem type 2
- Sketching the graph of a sine or cosine function: Problem type 3
- Sketching the graph of a secant or cosecant function: Problem type 1
- Sketching the graph of a secant or cosecant function: Problem type 2
- Sketching the graph of a tangent or cotangent function: Problem type 1
- Sketching the graph of a tangent or cotangent function: Problem type 2

Note: Additional coverage of prerequisite algebra topics is available with the ALEKS courses Algebra 1 and Integrated Mathematics I. Additional coverage of geometry topics is available with the ALEKS courses High School Geometry and Integrated Mathematics I.