Lesson 1

A2.1.a	Simplify an expression containing negative exponents so that all the exponents are positive

Lesson 2

A2.2.a	Identify restricted values for variables in the denominator of a rational expression
A2.2.b	Perform addition and subtraction of rational expressions
A2.2.c	Rewrite a rational expression in simplest form

Lesson 3

A2.3.a	State the number of significant digits in a given number
A2.3.b	Express answers to addition and multiplication problems using the correct number of significant digits
A2.3.c	Convert numbers to and from scientific notation
A2.3.d	Multiply and divide using scientific notation
A2.3.e	Identify the terms in an algebraic expression

Lesson 4

A2.4.a	Perform addition and subtraction operations with terms containing radicals
A2.4.b	Perform multiplication and division operations with terms containing radicals
A2.4.c	Simplify radical expressions by removing all square factors from under the radical sign
A2.4.d	Find decimal approximations of irrational roots using a calculator

Lesson 5

A2.5.a	Factor second-order polynomials into two binomial factors
A2.5.b	Use vertical multiplication to factor second-order polynomials, where the coefficient of the squared term is not one, into two binomial factors
A2.5.c	Use FOIL to factor second-order polynomials, where the coefficient of the squared term is not one, into two binomial factors
A2.5.d	Factor second-order polynomials into two binomial factors using vertical multiplication, where some terms are negative
A2.5.e	Factor second-order polynomials into two binomial factors using FOIL, where some terms are negative
A2.5.f	Identify common factors as the first step to factoring a polynomial
A2.5.g	Use repeated factoring to factor a polynomial completely
A2.5.h	Factor to solve quadratic equations
A2.5.i	Simplify compound rational expressions

Lesson 6

A2.6.a	Rewrite a radical expression as a base with a fractional exponent
A2.6.b	Rewrite a base with a fractional exponent as a radical expression

Lesson 7

A2.7.a	Define the imaginary number i
A2.7.b	Simplify radicals with negative numbers by factoring out i^2 (-1)
A2.7.c	Define a complex number as a number of the form $a + b$i
A2.7.d	Perform arithmetic operations on complex numbers

Lesson 8

A2.8.a	Write the conjugate of a real or complex binomial
A2.8.b	Use the conjugate to rationalize the denominator of a real or complex fraction

Lesson 9

A2.9.a	Write the square of a given binomial
A2.9.b	Write the square root of a given perfect-square second-degree polynomial
A2.9.c	Write the cube of a given binomial
A2.9.d	Write an arbitrary number of rows of Pascal's triangle
A2.9.e	Use Pascal's triangle to determine the coefficients for the terms of the expansion of a binomial raised to a power

Lesson 10

A2.10.a	Describe the pattern of exponents of terms generated when raising a binomial to any power
A2.10.b	Combine knowledge of coefficients and exponents to raise a binomial to any power
A2.10.c	Generalize knowledge of coefficients and exponents in expanded binomials, using the binomial theorem
A2.10.d	Apply the binomial theorem to raise a binomial to any power

Lesson 11

A2.11.a	Complete the square in a polynomial by adding a quantity to the second or third term
A2.11.b	Use completing the square as a means of solving a second-degree equation
A2.11.c	Check irrational roots of a second-degree equation by using the roots to solve the equation

Lesson 12

A2.12.a	State the quadratic formula
A2.12.b	Use the quadratic formula to solve quadratic equations

Lesson 13

A2.13.a	Use the discriminant to predict the nature of the solution to a quadratic equation

Lesson 14

A2.14.a — Calculate the result of a percentage markup on a base price

A2.14.b — Calculate original price from percentage and markup price

A2.14.c — Calculate the percentage of an element in a compound based on molecular weights

Lesson 15

A2.15.a — Manipulate a formula to isolate any variable

Lesson 16

A2.16.a — Set up a proportion based on information about relationships between two quantities

A2.16.b — Solve for the unknown in a proportion

Lesson 17

A2.17.a — Create unit multipliers

A2.17.b — Identify the correct unit multiplier to use in a given problem

A2.17.c — Multiply by a unit multiplier to convert it from one unit to another

A2.17.d — Identify the number of times a unit multiplier needs to be used based on whether a conversion is in one, two, or three dimensions

Lesson 18

A2.18.a — Solve problems involving movement of one object or person

A2.18.b — Solve problems involving movement of two objects or persons moving the same distance

Lesson 19

A2.19.a — Solve problems involving movement of two objects or persons moving different distances or directions

Lesson 20

A2.20.a — Find the slope and *y*-intercept of a line graphed on the Cartesian plane

A2.20.b — Find the slope and *y*-intercept of a line represented by a given equation

A2.20.c — Give the equation of a line graphed on the Cartesian plane

A2.20.d — Describe the equation of a line as a relationship between a dependent and an independent variable

A2.20.e — Find the equation in slope-intercept form when given the slope and one point on a line

A2.20.f — Find the slope when given two points on a line

A2.20.g — Find the equation in slope-intercept form when given two points on a line

Lesson 21

A2.21.a — Write the equation for a line parallel to a given line, passing through a given point

A2.21.b — Write the equation for a line perpendicular to a given line, passing through a given point

A2.21.c — Graph any linear inequality

Lesson 22

A2.22.a — Compute the distance between two points on a graph, using the distance formula

A2.22.b — Compute the midpoint between two points on a graph, using the midpoint formula

Lesson 23

A2.23.a — State the center and radius of a circle, given its equation

Lesson 24

A2.24.a — Plot points and sketch a parabola, given its equation

A2.24.b — Plot points and sketch a hyperbola, given its equation

A2.24.c — Estimate the coefficient of the squared term of the equation for a parabola, given its graph

A2.24.d — State the equation for a parabola, given the graph and three stated points on the parabola

Lesson 25

A2.25.a — Compute the axis of symmetry for any parabola, given its equation

A2.25.b — Compute the vertex of any parabola, given its equation

A2.25.c — Describe how the components of the standard form of the equation of a parabola affect the graph, in terms of geometric transformation

A2.25.d — Apply parabolas to area optimization problems

Lesson 26

A2.26.a — Give an example of an inverse relationship

A2.26.b — Identify an equation of the form $xy = a$ constant as a hyperbola

A2.26.c — Identify an equation of the form $ay^2 - bx^2 = n^2$ as a hyperbola

Lesson 27

A2.27.a — Graph a pair of equations when one or both are conic

A2.27.b — Find the solution of a system of linear or conic equations

Lesson 28

A2.28.a — Write a system of equations to solve coin problems

A2.28.b — Solve a system of equations representing a coin problem

A2.28.c — Write a system of equations to solve consecutive integer problems

A2.28.d — Solve a system of equations representing a consecutive integer problem

A2.28.e — Write a system of equations to solve a mixture problem

A2.28.f — Solve a system of equations representing a mixture problem

Lesson 29

A2.29.a   Write an equation or system of equations to solve a problem involving age

A2.29.b   Solve equation(s) representing a problem involving age

A2.29.c   Write a system of equations to solve a boat-and-current problem

A2.29.d   Solve a system of equations representing a boat-and-current problem

Lesson 30

A2.30.a   Solve a system of three equations

Lesson 31

A2.31.a   Add two or more right-angle vectors