Math-U-See

Student _____

Record Keeping: *Algebra 2*

	Date	Test Score	Proficiency
Pretest (Unit Test I)			

		LESSON PRACTICE		TEACH BACK	SYSTEMATIC REVIEW			H	Lesson Test	Test Date
		A	B		C	D	E			
1	Exponents									
2	Rational Expressions									
3	Scientific Notation; Combining Like Terms									
4	Radicals, Basic Operations, and Simplifying									
5	Factoring Polynomials; Rational Expressions									
6	Fractional Exponents									
7	Imaginary and Complex Numbers									
8	Conjugate Numbers									
9	Squares, Cubes, and Pascal's Triangle									
10	Binomial Theorem									

	Date	Test Score	Proficiency
Posttest (Unit Test I)			

LESSON OBJECTIVES

Lesson 1 Exponents

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

Lesson 2 Rational Expressions

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 Scientific Notation; Combining Like Terms

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 Radicals, Basic Operations, and Simplifying

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

Proficiency Guide: A (Advanced) 90–100% **P** (Proficient) 80–89% **NP** (Nearing Proficiency) 70–79% **BS** (Beginning Steps) Below 70%

Lesson 5	**Factoring Polynomials; Rational Expressions**
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	**Fractional Exponents**
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	**Imaginary and Complex Numbers**
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 $a + bi$
A2.7.d	Perform arithmetic operations on complex numbers
Lesson 8	**Conjugate Numbers**
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	**Squares, Cubes, and Pascal's Triangle**
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	**Binomial Theorem**
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

Math-U-See

Student _____

Record Keeping: *Algebra 2*

	Date	Test Score	Proficiency
Pretest (Unit Test II)			

		LESSON PRACTICE		TEACH BACK	SYSTEMATIC REVIEW			H	Lesson Test	Test Date
		A	B		C	D	E			
11	Completing the Square									
12	Quadratic Formula									
13	Discriminants									
14	Applications Using Percent									
15	Isolating One Variable									
16	Ratios									
17	Unit Multipliers									
18	Distance = Rate × Time									
19	More Motion Problems									

	Date	Test Score	Proficiency
Posttest (Unit Test II)			

LESSON OBJECTIVES

Lesson 11 Completing the Square

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 Quadratic Formula

A2.12.a State the quadratic formula

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

Lesson 13 Discriminants

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

Lesson 14 Applications Using Percent

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 Isolating One Variable

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

Lesson 16 Ratios

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 Unit Multipliers

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 Distance = Rate × Time

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 More Motion Problems

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

Proficiency Guide: A (Advanced) 90–100% **P** (Proficient) 80–89% **NP** (Nearing Proficiency) 70–79% **BS** (Beginning Steps) Below 70%

Math-U-See

Student _____

Record Keeping: *Algebra 2*

	Date	Test Score	Proficiency
Pretest (Unit Test III)			

		LESSON PRACTICE		TEACH BACK	SYSTEMATIC REVIEW			H	Lesson Test	Test Date
		A	B		C	D	E			
20	Graphing Lines: Slope-Intercept Formula									
21	Parallel and Perpendicular Lines; Inequalities									
22	Distance Formula and Midpoint Formula									
23	Conic Sections: Circle and Ellipse									
24	Parabola									
25	Parabola: Maxima and Minima									
26	Hyperbola									
27	Solving Systems of Equations									
28	Coins, Consecutive Integers, and Mixtures									
29	Age and Boat-and-Current Problems									
30	Solving Equations with Three Variables									
31	Vectors									

	Date	Test Score	Proficiency
Posttest (Unit Test III)			

LESSON OBJECTIVES

Lesson 20 Graphing Lines: Slope-Intercept Formula

- 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 Parallel and Perpendicular Lines; Inequalities

- 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 Distance Formula and Midpoint Formula

- 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 Conic Sections: Circle and Ellipse

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

Proficiency Guide: A (Advanced) 90–100% **P** (Proficient) 80–89% **NP** (Nearing Proficiency) 70–79% **BS** (Beginning Steps) Below 70%

Lesson 24 Parabola

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 Parabola: Maxima and Minima

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 Hyperbola

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 Solving Systems of Equations

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 Coins, Consecutive Integers, and Mixtures

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 Age and Boat-and-Current Problems

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 Solving Equations with Three Variables

A2.30.a	Solve a system of three equations

Lesson 31 Vectors

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