

# CW High School

## Algebra II B

### 1. Inverses and Radicals (20.00%)

#### Learning Targets

#### 1.1 I can use composition and analyze graphs to determine if two functions are inverses.

Learning Target	Descriptor	Definition
4	Proficient	I can use composition and analyze graphs to determine if two functions are inverses.
3	Developing	I can sketch a graph of an inverse of a function.
2	Basic	I can find the inverse of a function and the composition of two functions.
1	Minimal	I can find the sum, difference, product and quotient of two functions.
0	No Evidence	No evidence shown.

#### 1.2 I can sketch square root functions and inequalities, simplify nth roots, and perform mathematical operations on radical expressions.

Learning Target	Descriptor	Definition
4	Proficient	I can sketch square root functions and inequalities, simplify nth roots, and perform mathematical operations on radical expressions.
3	Developing	I can simplify nth roots that are not perfect roots.
2	Basic	I can state the domain and range of a square root function and simplify nth "perfect" roots.
1	Minimal	I can sketch a graph of a square root function and use a calculator to approximate roots.
0	No Evidence	No evidence shown.

#### 1.3 I can solve radical equations and inequalities and rational exponent equations by isolating and undoing the radical.

Learning Target	Descriptor	Definition
4	Proficient	I can solve radical equations and inequalities and rational exponent equations by isolating and undoing the radical.
3	Developing	I can perform mathematical operations on expressions with rational exponents, then simplify them.
2	Basic	I can simplify and evaluate radical expressions and rational exponent expressions.
1	Minimal	I can write a rational exponent in radical form and vice versa.
0	No Evidence	No evidence shown.

### 2. Exponential Functions and Logarithms (20.00%)

#### Learning Targets

#### 2.1 I can classify an exponential function as growth or decay, find a multiplier, sketch it, and find its value at any x-value.

Learning Target	Descriptor	Definition
4	Proficient	I can classify an exponential function as growth or decay, find a multiplier, sketch it, and find its value at any x-value.
3	Developing	I can transform graphs of exponential functions and use an initial value and multiplier to find its value.
2	Basic	I can sketch the graph of an exponential function of the form $y = ab^x$ and correctly state a multiplier for a percent change function.
1	Minimal	I can sketch the graph of an exponential function of the form $y = b^x$ .
0	No Evidence	No evidence shown.

## 2.2 I can solve exponential equations and write exponential equations to model functions.

Learning Target	Descriptor	Definition
4	Proficient	I can solve exponential equations and write exponential equations to model functions.
3	Developing	I can model a compound interest problem to find the value of an investment after n-years.
2	Basic	I can solve an exponential equation or inequality by creating like bases.
1	Minimal	I can solve an exponential equation or inequality when the bases are the same.
0	No Evidence	No evidence shown.

## 2.3 I can evaluate log expressions, solve single log equations, and sketch graphs of log functions with transformations.

Learning Target	Descriptor	Definition
4	Proficient	I can evaluate log expressions, solve single log equations, and sketch graphs of log functions with transformations.
3	Developing	I can evaluate a log function by rewriting it in exponential form.
2	Basic	I can recognize that log functions are inverses of exponential functions and sketch log functions.
1	Minimal	I can write exponential equations in log form and vice versa.
0	No Evidence	No evidence shown.

## 2.4 I can utilize log properties to solve exponential equations of any base.

Learning Target	Descriptor	Definition
4	Proficient	I can utilize log properties to solve exponential equations of any base.
3	Developing	I can use the log properties to simplify a log or natural log equation then solve it.
2	Basic	I can use the log properties to evaluate a log or natural log
1	Minimal	I can find common and natural logs on a calculator.

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Learning Target	Descriptor	Definition
0	No Evidence	No evidence shown.

### 2.5 I can analyze exponential growth and decay functions and logistic functions.

Learning Target	Descriptor	Definition
4	Proficient	I can analyze exponential growth and decay functions and logistic functions.
3	Developing	I can determine a growth or decay constant.
2	Basic	I can find the initial value, limiting value, and value at any point of a logistic function.
1	Minimal	I can sketch a logistic function.
0	No Evidence	No evidence shown.

### 3. Rational Expressions and Radicals (20.00%)

#### Learning Targets

#### 3.1 I can simplify rational expressions, add, subtract, multiply and divide them, and simplify complex fractions.

Learning Target	Descriptor	Definition
4	Proficient	I can simplify rational expressions, add, subtract, multiply and divide them, and simplify complex fractions.
3	Developing	I can add and subtract rational functions.
2	Basic	I can divide rational functions.
1	Minimal	I can multiply rational functions and simplify the answer.
0	No Evidence	No evidence shown.

#### 3.2 I can determine the location of x and y intercepts, holes, vertical, oblique and horizontal asymptotes of rational functions and graph them.

Learning Target	Descriptor	Definition
4	Proficient	I can determine the location of x and y intercepts, holes, vertical, oblique and horizontal asymptotes of rational functions and graph them.
3	Developing	I can use the three degree rules to locate any horizontal asymptotes of a rational function and any oblique asymptotes.
2	Basic	I can locate the vertical asymptotes and holes of a rational function.
1	Minimal	I can sketch the graph of a reciprocal function including translations.

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Learning Target	Descriptor	Definition
0	No Evidence	No evidence shown.

### 3.3 I can solve direct, joint variation, combination and inverse problems.

Learning Target	Descriptor	Definition
4	Proficient	I can solve direct, joint variation, combination and inverse problems.
3	Developing	I can solve a joint variation problem.
2	Basic	I can solve an inverse variation problem.
1	Minimal	I can solve a direct variation problem.
0	No Evidence	No evidence shown.

### 3.4 I can utilize common denominators and multiplication to clear any fractions from an algebraic equation and solve .

Learning Target	Descriptor	Definition
4	Proficient	I can utilize common denominators and multiplication to clear any fractions from an algebraic equation and solve .
3	Developing	I can factor trinomials and binomials in denominators, and multiply by a common denominator to clear all fractions from an algebraic equation.
2	Basic	I can solve a simple algebraic equation with monomials in the denominator by multiplying by a common denominator.
1	Minimal	I can identify the common denominator in a simple algebraic fraction and multiply by it to clear all fractions.
0	No Evidence	No evidence shown.

## 4. Conic Sections (20.00%)

### Learning Targets

#### 4.1 I can find the midpoint of a line segment, and the distance between two points on the coordinate system and apply the mid-point and distance formulas to geometric figures and mapping coordinate problems.

Learning Target	Descriptor	Definition
4	Proficient	I can find the midpoint of a line segment, and the distance between two points on the coordinate system and apply the mid-point and distance formulas to geometric figures and mapping coordinate problems.
3	Developing	I can apply the distance formula to a geometric figure.
2	Basic	I can find the midpoint of a line segment between two points.

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Learning Target	Descriptor	Definition
1	Minimal	I can find the distance between two points.
0	No Evidence	No evidence shown.

**4.2 I can sketch graphs of parabolas, convert their equations from vertex to standard form and vice versa, and write the equation of a parabola given different characteristics.**

Learning Target	Descriptor	Definition
4	Proficient	I can sketch graphs of parabolas, convert their equations from vertex to standard form and vice versa, and write the equation of a parabola given different characteristics.
3	Developing	I can convert a parabola from standard to vertex form.
2	Basic	I can locate the focus and directrix of a parabola in vertex form.
1	Minimal	I can sketch a parabola from an equation in vertex form.
0	No Evidence	No evidence shown.

**4.3 I can convert an equation of a circle and ellipse to standard form and sketch their graphs.**

Learning Target	Descriptor	Definition
4	Proficient	I can convert an equation of a circle and ellipse to standard form and sketch their graphs.
3	Developing	I can find the center and radius of a circle given two points on its diameter and use the properties of ellipses to write their equations in standard form.
2	Basic	I can write the equation of a circle or ellipse given a sketch or description of it.
1	Minimal	I can sketch a circle and ellipse given their equations in standard form.
0	No Evidence	No evidence shown.

**4.4 I can convert an equation of a hyperbola to standard form and sketch its graph.**

Learning Target	Descriptor	Definition
4	Proficient	I can convert an equation of a hyperbola to standard form and sketch its graph.
3	Developing	I can find the foci and vertices of a hyperbola given its equation in standard form.
2	Basic	I can write equation for the asymptotes of a hyperbola and given its equation in standard form.
1	Minimal	I can sketch a hyperbola given its equation in standard form.
0	No Evidence	No evidence shown.

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4.5 I can solve systems of non-linear equations graphically and algebraically (using elimination or substitution) and sketch the graph of a solution to a non-linear inequality..

Learning Target	Descriptor	Definition
4	Proficient	I can solve systems of non-linear equations graphically and algebraically (using elimination or substitution) and sketch the graph of a solution to a non-linear inequality..
3	Developing	I can use elimination with multiplication to solve a non-linear system of equation.
2	Basic	I can use elimination to solve a non-linear system if one of the variables eliminates without multiplying.
1	Minimal	I can estimate the solutions to a non-linear system by sketching their graphs.
0	No Evidence	No evidence shown.

### 5. Sequences and Trigonometry (20.00%)

#### Learning Targets

5.1 I can analyze sequences, determine whether a sequence is arithmetic or geometric, and then write equations to model each and use the equations to predict values of the sequence.

Learning Target	Descriptor	Definition
4	Proficient	I can analyze sequences, determine whether a sequence is arithmetic or geometric, and then write equations to model each and use the equations to predict values of the sequence.
3	Developing	I can use descriptors of a sequence to write an equation to model it and use the equation to predict terms.
2	Basic	I can write an equation for an arithmetic and geometric sequence given the first three terms.
1	Minimal	I can recognize arithmetic and geometric sequences and write the next three terms.
0	No Evidence	No evidence shown.

5.2 I can sketch angles in standard position, find reference angles and coterminal angles, and use angle symmetry to write the six trigonometric ratios of common angles or points.

Learning Target	Descriptor	Definition
4	Proficient	I can sketch angles in standard position, find reference angles and coterminal angles, and use angle symmetry to write the six trigonometric ratios of common angles or points.
3	Developing	I can use 30-60-90 and 45-45-90 triangle side lengths to write the sine and cosine of any common angle from 0 to 360 degrees.
2	Basic	I can find coterminal and reference angles for any positive or negative angle.
1	Minimal	I can sketch a positive and negative angle in standard position.

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Learning Target	Descriptor	Definition
0	No Evidence	No evidence shown.

### 5.3 I can sketch angles in radians, convert a degree to a radian, radian to a degree, and write the six trig ratios for angles in radians.

Learning Target	Descriptor	Definition
4	Proficient	I can sketch angles in radians, convert a degree to a radian, radian to a degree, and write the six trig ratios for angles in radians.
3	Developing	I can find the sine, cosine and tangent for any common radian angle on an axis or in the first quadrant without a table or calculator.
2	Basic	I can convert my calculator between degrees and radians and find sine, cosine, and tangent values for any angle on it.
1	Minimal	I can convert common angles between degrees and radians and use tables to find any of the six trig functions of any common angle.
0	No Evidence	No evidence shown.

### 5.4 I can apply right triangle trigonometry, the law of sines and the law of cosines to solve for an angle or a side of a triangle and find the area of a triangle..

Learning Target	Descriptor	Definition
4	Proficient	I can apply right triangle trigonometry, the law of sines and the law of cosines to solve for an angle or a side of a triangle and find the area of a triangle..
3	Developing	I can use right triangle trig and the law of sines to find missing sides and angles in a triangle.
2	Basic	I can use right triangle trig to find a missing angle in a right triangle.
1	Minimal	I can use right triangle trig to find a missing side of a right triangle.
0	No Evidence	No evidence shown.

### 5.5 I can sketch graphs of sine and cosine functions including vertical and phase shifts, amplitude changes, and period changes.

Learning Target	Descriptor	Definition
4	Proficient	I can sketch graphs of sine and cosine functions including vertical and phase shifts, amplitude changes, and period changes.
3	Developing	I can sketch a sine or cosine graph with a phase shift and amplitude change.
2	Basic	I can sketch a sine or cosine graph with a vertical shift.
1	Minimal	I can sketch a sine and cosine graph.

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Learning Target	Descriptor	Definition
0	No Evidence	No evidence shown.

Submitted on 11/12/2018 by