Algebra IIA Standards and Learning Targets

**1. Linear Equations**

1.1 Students will be able to determine the equation of a line given its slope and a point on the line

1.2 Students will be able to determine the equation of a line given 2-points on the line

1.3 Students will be able to write the line equation parallel given an equation and a point

1.4 Students will be able to write the line equation perpendicular given an equation and a point

**2. Systems of Equations**

2.1 Students will be able to solve a system of equations by graphing.

2.2 Students will be able to solve a system of equations by substitution.

2.3 Students will be able to solve a system of equations by elimination.

2.4 Students will be able to solve application problems involving systems.

2.5 Students will be able to solve linear inequalities and a system of linear inequalities.

**3. Polynomials**

3.1 Students will be able to add and subtract polynomials

3.2 Students will be able to multiply polynomials

3.3 Students will be able to factor out a greatest common factor and divide polynomials

3.3 Students will be able to factor polynomials in the form 

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**4. Quadratics**

4.1 Students will be able to find the vertex of a quadratic in any form.

4.2 Students will be able to sketch the graph of a quadratic function in any form by creating a table of values (and find the vertex, line of symmetry, etc.)

4.3 Students will be able to determine the domain and range given a graph.

4.4 Students will be able to solve quadratics graphically, by factoring and by the quadratic formula.

4.5 Students will be able to solve quadratics using the quadratic equation

4.6 Students will be able to solve projectile motion word problems

Algebra IIB Standards and Learning Targets

**Students will be able to:**

**5. Rational expressions and exponents**

5.0 Mixed factoring

5.1 Factoring sum/difference of cubes

5.3A Simplify rational expressions and find excluded values

5.3 B Multiply and divide rational expressions

5.4 Rational exponents and finding real roots

**6. Functions**

6.0 Function notation

6.1 Add, subtract, multiply or divide using function notation

6.2 Evaluate composite functions

6.3 Graph inverse functions

6.4 Find the inverse of a function

**7. Logs**

7.1 Transform between log form and exponential form

7.2 Apply properties of logs

7.3 Solve logarithmic equations

7.4 Applications to logs/exponential functions

**8. Intro to Conics**

8.1 Graph a circle from an equation

8.2 Write the equation of the circle given the center and radius

8.3 Write the equation of a circle given a translation

8.4A Write the equation of a circle given the ends of a diameter

8.4B Write the equation of a circle given the center and a point on the circle

8.5 Graph an ellipse from an equation