Expectations

1.1 The student will represent functions and relations numerically, graphically, and algebraically.
1.2 The student will describe and apply properties of functions and relations.
1.3 The student will perform a variety of operations and geometrical transformations on functions and relations.
1.4 The student will use numerical, algebraic, and graphical representations of functions and relations in order to solve real-world problems.
2.1 The student will describe relationships between geometric figures.

Essential Question

How do quadratic relations model real-world problems and their solutions?

Enduring Understanding

The characteristics of quadratic relations and their representations are useful in solving real-world problems.

Indicators

1.1.A2.5 write the equation and describe the characteristics of a circle, ellipse, and hyperbola centered at the origin and parabola with vertex at the origin given its graph.

1.1.A2.6 ***write the equation and describe the characteristics of a conic section given its graph.***

1.1.A2.13 represent circles, ellipses, and hyperbolas centered at the origin and parabolas with vertex at the origin algebraically and graphically.

1.1.A2.14 ***represent conic sections algebraically and graphically.***

1.2.A2.9 describe the properties of circles, ellipses, and hyperbolas centered at the origin and parabolas with vertex at the origin.

1.2.A2.10 ***describe the properties of circles, ellipses, hyperbolas, and parabolas.***

1.3.A2.8 ***determine the standard form for conics.***

1.4.A2.10 ***solve quadratic systems of equations and inequalities.***

2.1.A2.1 describe circles, ellipses, parabolas, and hyperbolas as a locus of points.