Conic Sections Lesson Objectives

Analytic Geometry Lesson

Apply the distance and midpoint formulas to find the distance and midpoint between two points on the coordinate plane

Prove geometric relationships among points and lines using analytical methods

Introduction to Conic Sections Lesson

Recognize circles, ellipses, parabolas, and hyperbolas

Use the general equation of a conic section to identify the conic section

Circles Lesson

Write the equation of a circle in both standard form and general form and identify its center and radius

Graph a circle when given both the standard and general form and identify its center and radius

Use circles to model and solve problems in real-world scenarios

Ellipses Lesson

Graph an ellipse when given both the standard and general forms, and recognize its center, vertices, and foci

Write the equation of an ellipse in both standard form and general form and identify its center, vertices, and foci

Write and graph the equation of an ellipse when its center, vertices, and foci are provided

Use ellipses to model and solve problems in real-world scenarios

Parabolas Lesson

Write and graph the equation of a parabola when provided the vertex and focus

Graph a parabola when given both the standard and general forms of the equation, and recognize its focus and directrix

Write the equation of a parabola in both standard form and general form and identify its focus and directrix

Use parabolas to model and solve problems in real-world scenarios

Hyperbolas Lesson

Graph a hyperbola when given both its standard and general form, and recognize its vertices, foci, and asymptotes

Write the equation of a hyperbola in both standard form and general form and identify its center, vertices, foci, and asymptotes

Write and graph the equation of a hyperbola when its center, vertices, and foci are provided

Use hyperbolas to model and solve problems in real-world scenarios