Equations of Ellipses and Hyperbolas

Today's Standard

HSG.GPE.A3 - (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.

Real-World Applications for this Standard

Satellite orbits; Architectural design; Optical systems; Astronomical calculations

Today I Learned

Today I learned how to find the equations for ellipses and hyperbolas using special points called foci.

Common Stumbling Blocks

Some students think the special points, or foci, are always in the middle, but they can be anywhere. Others don't know that the distances from points on the shapes to the foci add up to the same number.

Quiz Me

- What is a focus?
- Where can foci be located?
- What is an ellipse?
- What is a hyperbola?
- What stays the same for points on an ellipse?

Help Me

An ellipse and a hyperbola are shapes you can see in things like satellite paths and building designs. Knowing how to find their equations helps us understand and use these shapes in real life.