

Constructing and exploring conics geometrically (Tutorial B11)

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Geometric conic functionality allows geometric construction and exploration of conic sections using geometric definitions

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of foci, vertices, directrices, or using any 5 given points.
To construct a conic section using these features, first

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insert a Graphs or Geometry application. I'm in the Graphs application. Next, click the Document Tools menu, and choose

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Geometry, Shapes, and choose the conic or method you'd like to use. I'll construct a parabola by defining the

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focus and directrix, so I'll choose Parabola. Now I need to define the focus, so I'll find that location and then

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click to define it. Now I'll roll my cursor away from the focus. If I stay away from the axes, the point I'm dragging

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defines the vertex of the parabola, so if I wanted to define it that way, I could drag until I locate the vertex and

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click. As I roll over an axis, I'm now defining a directrix, and constructing the parabola that way instead. To create

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my parabola, I'll click on the axis (or another line previously created) to define it, and you'll see the parabola appear.

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You can construct other conic sections just as easily. I'll go to Document Tools, and choose Geometry, Shapes again,

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and this time I'll choose Ellipse. We'll construct an ellipse by defining the foci and a point on the ellipse. Set the

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first focus by rolling to its location and clicking. Next, roll to the location of the other focus, and click again.

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Now roll away from your foci to define the last point, a point on your ellipse. Once you've found it, click to define

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your ellipse. Now you can explore and compare the conic sections you've defined geometrically.

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