Calculus Year 13 (Level 8)

Graphing Conic Sections

Start Graphmatica and do the following excercises.

1. Plot the ellipse printed on the summary Conic Sections handout. Also plot the same ellipse rotated 90 degrees.

2. Plot the hyperbola printed on the summary Conic Sections handout. Include the asymptotes.

3. Plot the conjugate of the hyperbola.

4. Plot the parabola printed on the summary Conic Sections handout. Also plot the same parabola rotated 90, 180 and 270 degrees.

5. Plot the function $x^2 + y^2 = 16$. What is special about this ellipse?

6. Plot the function $x^2 - y^2 = 16$. What is special about this hyperbola?

7. Plot the function $x^2 - y^2 = -16$. What is the relation with the previous hyperbola?

8. Plot a parabola that fits as nicely as you can on top of each of the branches of the hyperbola's in item 6 and 7 above.