

Write the equation for the ellipse described.

1. The center has coordinates of (5, 4). The major axis is parallel to the x-axis with a length of 16. The minor axis has a length of 8.

2. The endpoints of the major axis are (-10,-5) and (4,-5). The endpoints of the minor axis are (-3,1) and (-3,-11).

3. The center is at (4,7). The major axis is 10 units and the minor axis is 4 units. The major axis is parallel to the y-axis.

Hyperbolas

Find the coordinates of the vertices and foci and the slopes of the asymptotes for each hyperbola whose equation is given. Graph on the axis provided.

4. $\frac{x^2}{16} - \frac{y^2}{25} = 1$

5. $\frac{y^2}{49} - \frac{x^2}{36} = 1$

6. $\frac{(y-2)^2}{9} - \frac{(x+3)^2}{25} = 1$

center: _____

center: _____

center: _____

vertices: _____

vertices: _____

vertices: _____

foci: _____

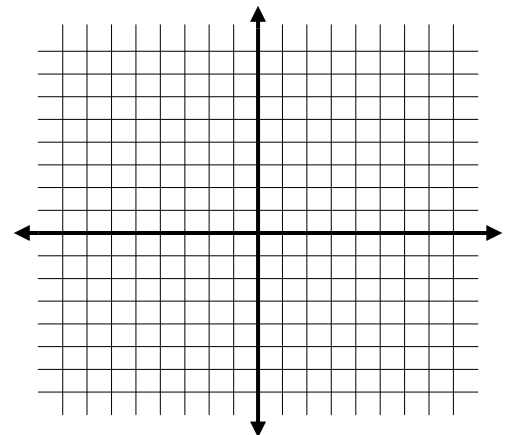
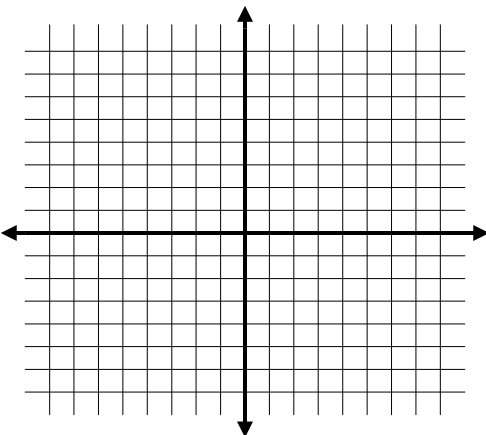
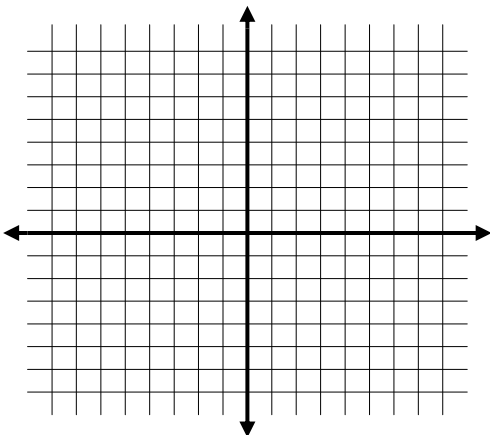
foci: _____

foci: _____

slope: _____

slope: _____

slope: _____



Complete the square and write the standard equation.

7. $y^2 - 2x^2 + 6y + 4x = 9$

8. $9x^2 - 4y^2 - 90x + 32y - 163 = 0$

9. $-2x^2 + 3y^2 + 4x - 60y + 268 = 0$

Write an equation for the hyperbola described.

10. The vertices are (0,5) and (0,-5). And the foci is (0,13) and (0,-13). The transverse axis is vertical.

11. The vertices are at (8,14) and (8,-10). The conjugate axis is 6 units long.

12. The hyperbola is centered at (3,-5) and has a vertical transverse axis. The value of a is 5 and the value of b is 7.

Classify each conic section. Choices are the following: parabola, circle, ellipse, and hyperbola.

13. $x^2 + 4y^2 + 16y = 16$

14. $x^2 + y^2 - 144 = 0$

15. $x^2 = -6y$

16. $x^2 + y^2 + 6x - 2y + 9 = 0$

17. $4x^2 + y^2 - 48x + 140 = 0$

18. $-9x^2 + y^2 - 72x - 153 = 0$