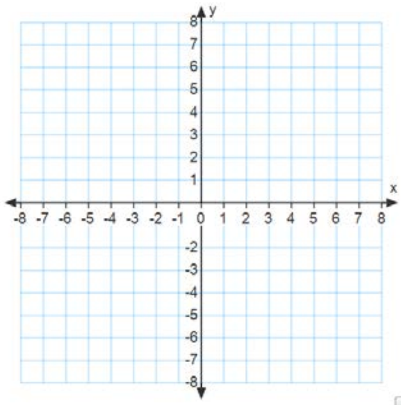
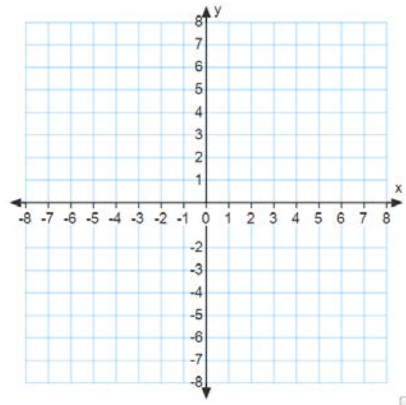
PreCalculus **Name**______________________
WS: Chapter 9 Review **Date**____________**Block**_____

Find the vertex, axis of symmetry, focus, and directrix of the parabola and sketch its graph.

1.) $y^2 + 6y + 8x + 25 = 0$

2.) $\left(x + \frac{1}{2}\right)^2 = 4(y - 1)$



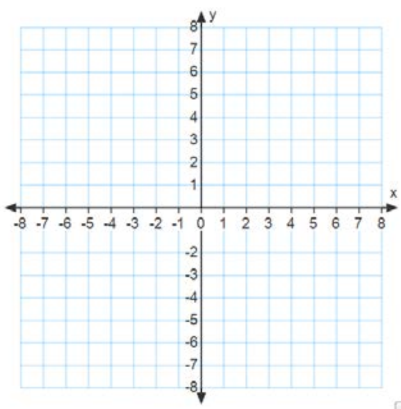


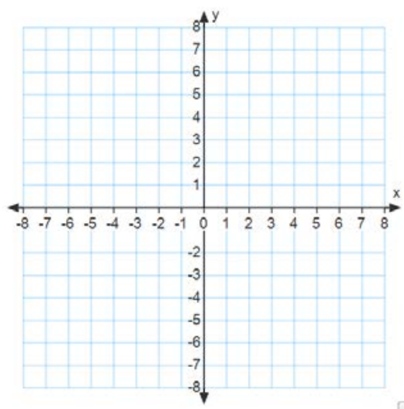
Find the standard form of the equation of the parabola with the given characteristics.

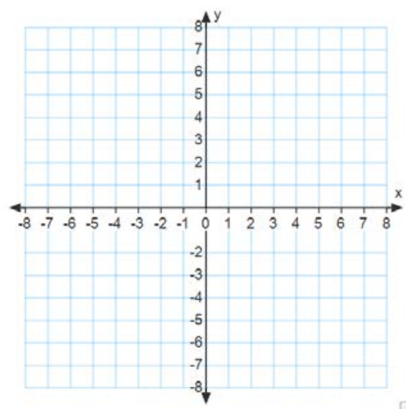
3.) Vertex: (-1, 2); Focus (-1, 0)

4.) Vertex: (0, 4); Directrix: $y = 2$

5.) Focus: (2, 2); Directrix: $x = -2$

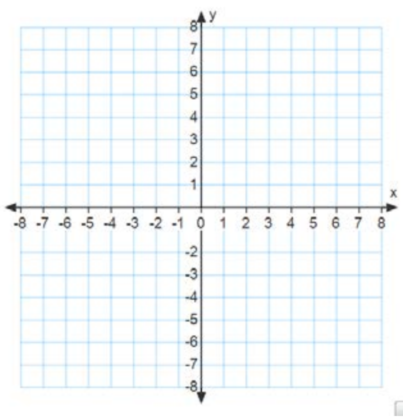




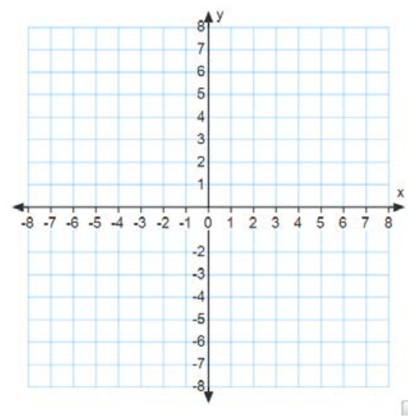


Identify the conic as a circle or ellipse. Then find the center and radius (if it's a circle); find the center, vertices, co-vertices, and foci (if it's an ellipse). Sketch its graph.

6.) $9x^2 + 4y^2 + 36x - 24y + 36 = 0$

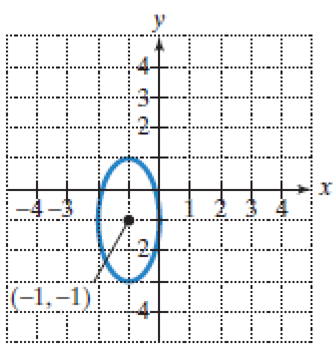


7.) $x^2 + y^2 - 4x + 6y - 3 = 0$

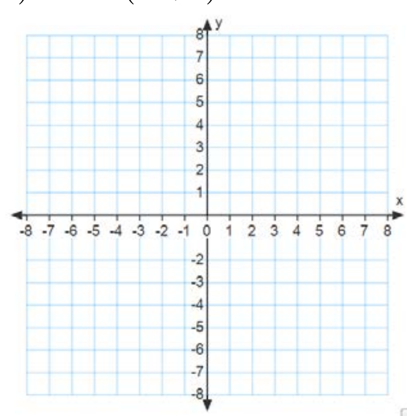


Find the standard form of the equation of the ellipse with the given characteristics.

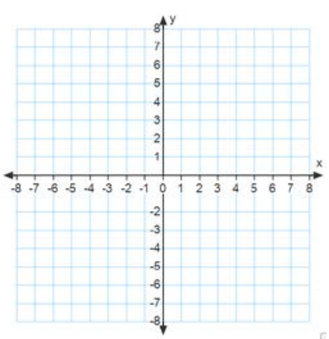
8.)



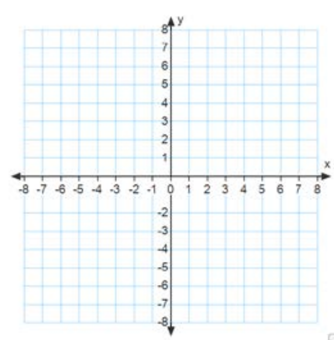
9.) Vertices $(\pm 6, 0)$; Foci: $(\pm 2, 0)$



10.) Foci $(\pm 5, 0)$; Major Axis Length is 12



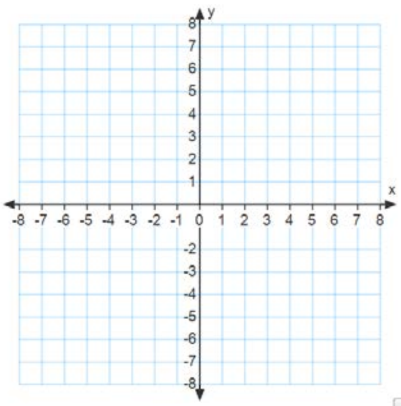
11.) Vertices (0, 2) and (4, 2);
endpoints of the minor axis are (2, 3) and (2, 1)

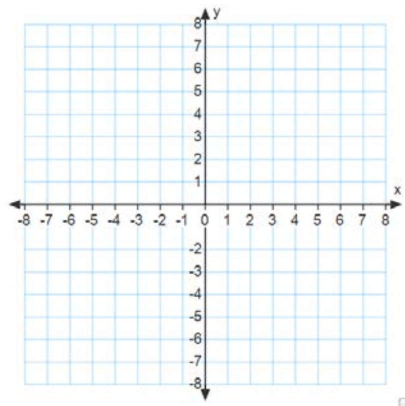


Find the center, vertices, foci, lines containing the axes, and the equations of the asymptotes of the hyperbola, and then sketch its graph.

12.) $9x^2 - y^2 - 36x - 6y + 18 = 0$

13.) $x^2 - 9y^2 + 36y - 72 = 0$

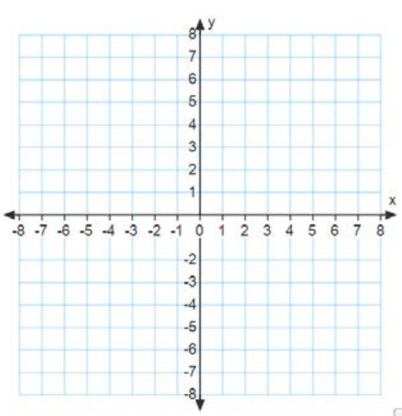


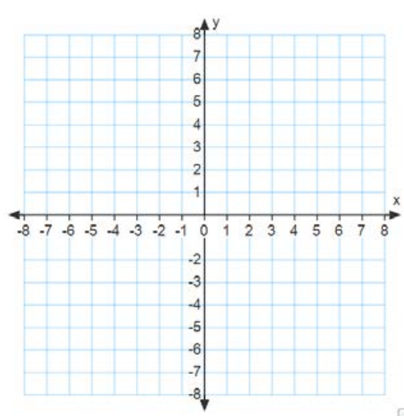


Find the standard form of the equations of the hyperbola with the given characteristics and center at the origin.

14.) Vertices $(0, \pm 2)$; Foci: $(0, \pm 4)$

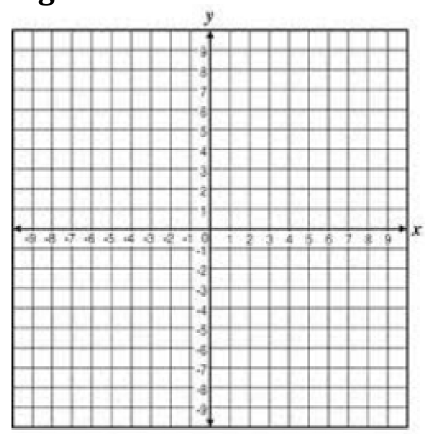
15.) Vertices $(\pm 1, 0)$; Asymptotes: $y = \pm 5x$





Find the standard form of the equations of the hyperbola with the given characteristics.

16.) Vertices $(4, 1)$ and $(4, 9)$; Foci $(4, 0)$ and $(4, 10)$



Write the equation in standard form and then classify the graph as a parabola, circle, ellipse, or hyperbola.

17.) $x^2 + y^2 - 6x + 4y + 9 = 0$

18.) $x^2 + 4y^2 - 6x + 16y + 21 = 0$

19.) $4x^2 - y^2 - 4x - 3 = 0$

20.) $y^2 - 6y - 4x + 21 = 0$