Test Unit   Conics   Name_____
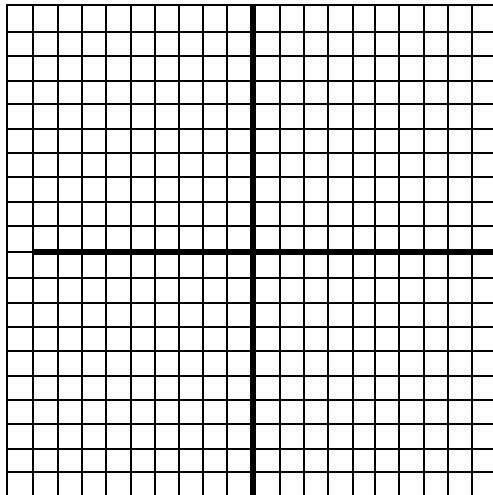   **Show all work.** use separate paper if necessary.

1) Identify the vertex, focus point, p value, and directrix of the following parabola. Sketch
$(y - 2)^2 = 16(x+3)$

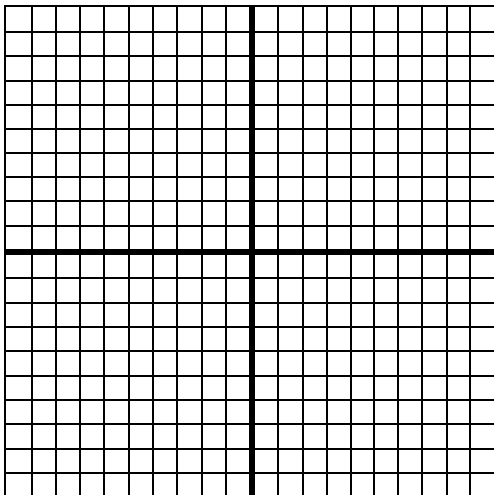vertex = _____

p = _____

Directrix _____

Focus point _____

Write in standard form:

2) $x^2 -9y^2 - 8x -54y = 75$
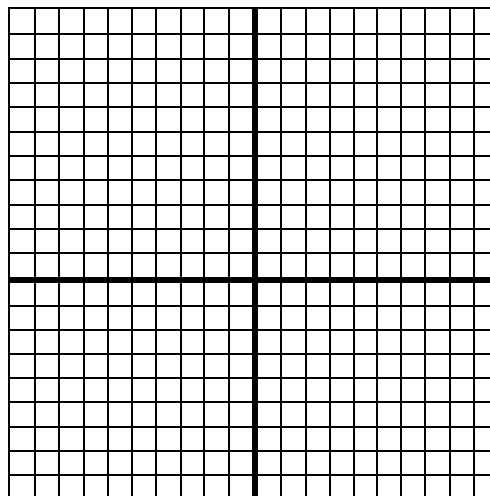   What conic is this? _____
         Sketch.

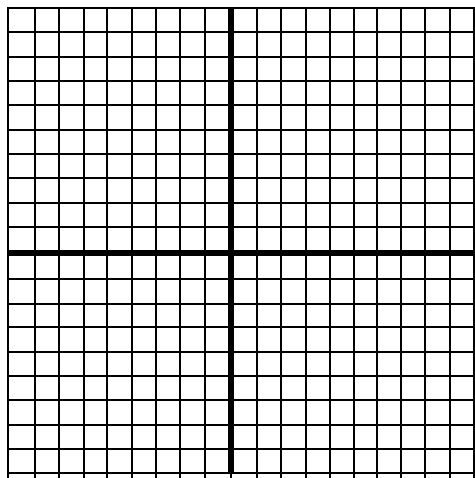3) Write in standard form: $x^2 + 6x - 8y = 55$
     What conic is this?_____
   Sketch.

4) Find the vertices, center, and focus points of the ellipse, sketch:

$$\frac{(y-1)^2}{4} + \frac{(x+3)^2}{20} = 1$$
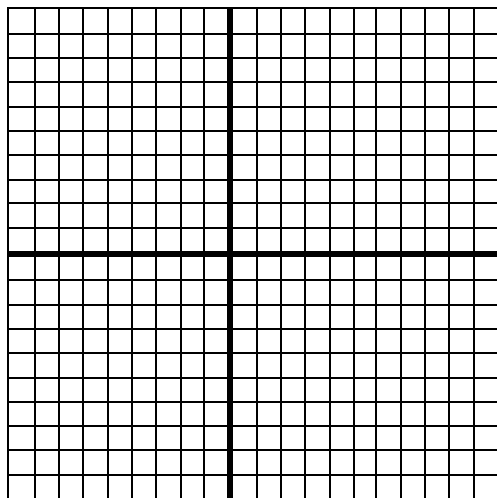
Center_____

Vertices _____and_____

_____and_____

Foci _____and _____

5) Find the equation of a circle with center (4 , -6) with radius 11.

7) Sketch, determine the following:

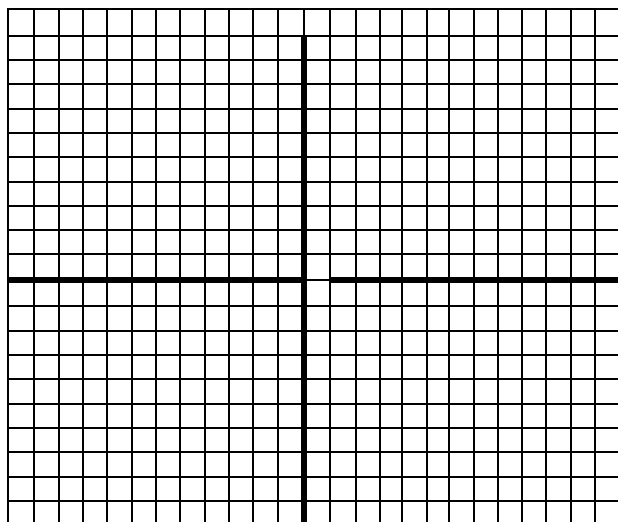a) $$\frac{x^2}{16} - \frac{y^2}{9} = 1$$

Center_____

Vertices _____and_____

Foci _____and _____

Asymptotes y = _____

y = _____

8) Sketch, determine the following:

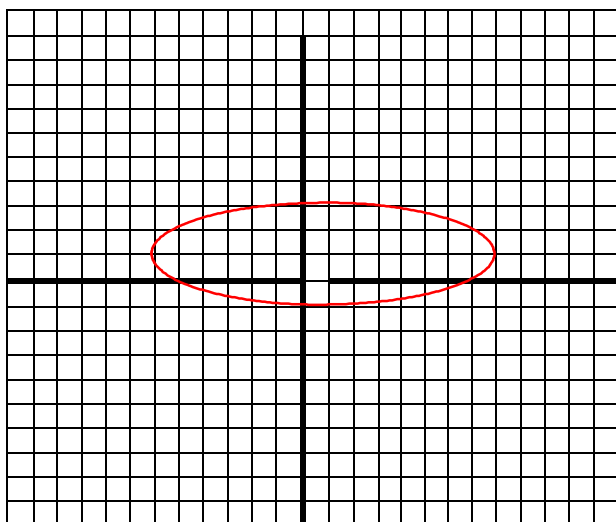$$\frac{(y+1)^2}{16} - \frac{(x-6)^2}{9} = 1$$

Center_____

Vertices _____and_____

Foci _____and _____

Asymptotes y = _____

y = _____

9) Find the equation of the following conic

Name_____

10) A semielliptical arch over a tunnel for a 20' wide road through a mountain has a height at the center of 30 ft.

Sketch the problem, find and equation for the semielliptical tunnel and find the height of the arch 3 feet from the edge of the tunnel.