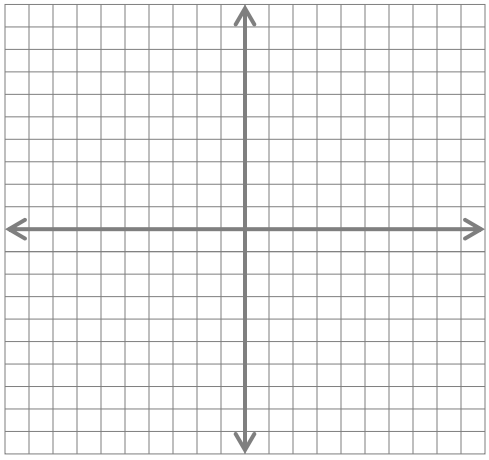
Pre-Calculus
REVIEW: Conics

Name: _____

1. Identify the vertex, focus, axis of symmetry, and directrix. Then graph the parabola.

$(y - 2)^2 = 8(x - 5)$



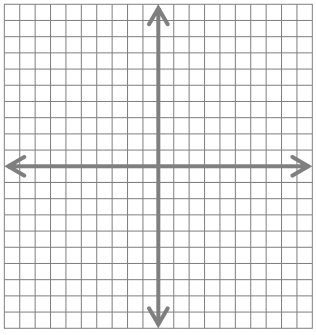
Vertex:

Focus:

Axis of Symmetry:

Directrix:

2. Write an equation for a parabola with focus: focus (0, 4), directrix $y = -2$



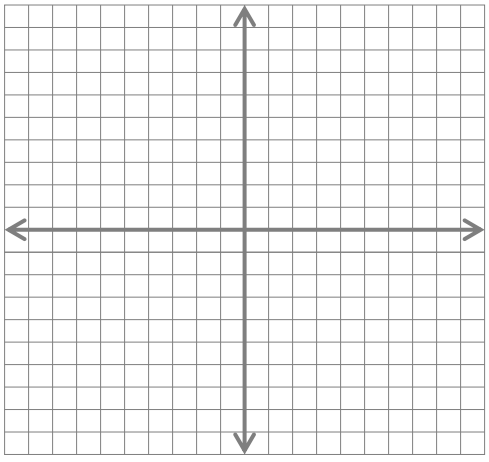
3. A cross section of a satellite dish is in the shape of a parabola.
The antenna is located at the focus which is 2 inches from the vertex.
The satellite dish's vertex is at the origin and the satellite points upwards.
Write an equation for the cross section of the satellite.

4. Write in standard form: $y^2 + 21 = -20x - 6y - 68$

5. Write the equation for the ellipse in standard form. Identify the center, vertices, and co-vertices. Then sketch a graph.

$4x^2 + 8y^2 - 8x + 48y + 44 = 0$

Equation:



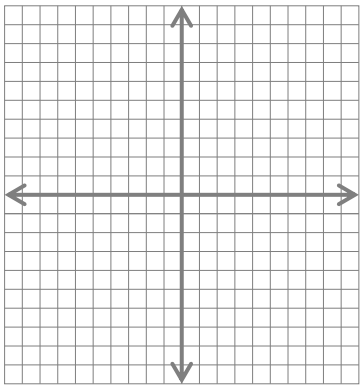
Center:

Vertices:

Co-vertices:

Foci:

6. Write an equation in standard form for the ellipse with the given set of characteristics.
foci: (-6, 9), (-6, -3); length of major axis equals 20



7. Identify the center, vertices of the hyperbola, equations of the asymptotes, foci, and sketch a graph.

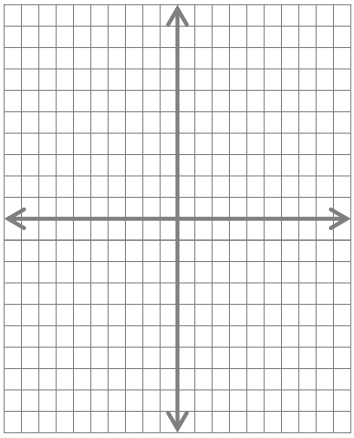
$$\frac{(y-1)^2}{4} - (x+1)^2 = 1$$

Center:

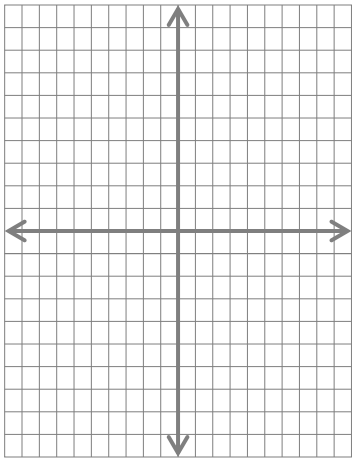
Vertices:

Foci:

Equation of Asymptotes:



8. Write an equation for the hyperbola with the given characteristics.
vertices: (-3, -12), (-3,-4); foci: (-3,-15), (-3,-1)



For 9 – 11, write each equation in standard form. Then determine the type of conic represented by the equation.

9. $x^2 - 4y^2 - 6x - 16y - 11 = 0$

10. $4y^2 - x - 40y + 107 = 0$

11 $9x^2 + 4y^2 + 162x + 8y + 732 = 0$