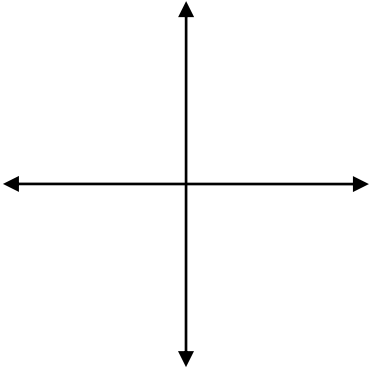


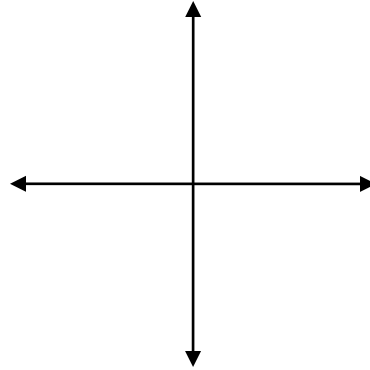
Directions: Sketch the graph of each of the following hyperbolas.

1. $\frac{x^2}{8} - \frac{y^2}{12} = 1$



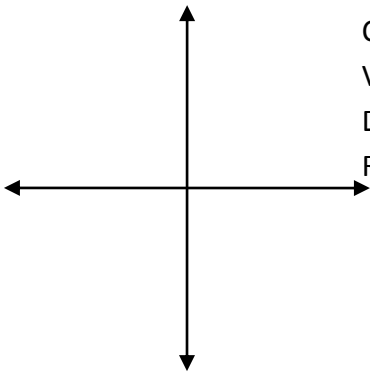
Center:
Vertices:
Domain:
Range:

2. $x^2 = 9 + y^2$



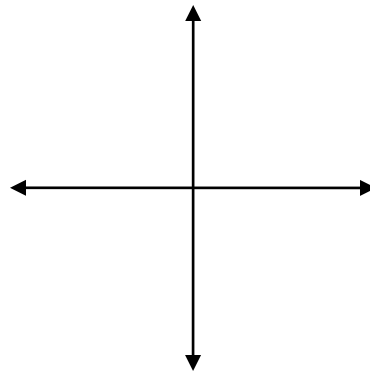
Center:
Vertices:
Domain:
Range:

3. $25x^2 - 4y^2 = -100$



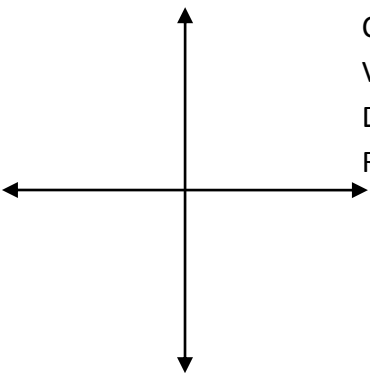
Center:
Vertices:
Domain:
Range:

4. $\frac{(x-3)^2}{16} - \frac{(y+2)^2}{49} = 1$



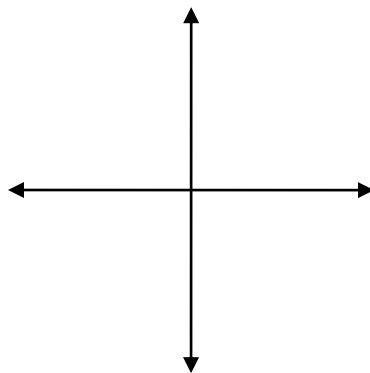
Center:
Vertices:
Domain:
Range:

5. $4x^2 - y^2 = -16$



Center:
Vertices:
Domain:
Range:

6. $\frac{(y+1)^2}{25} - \frac{(x-3)^2}{36} = 1$



Center:
Vertices:
Domain:
Range:

Directions: Write an equation for each of the following hyperbolas.

7. Hyperbola, center at the origin, vertex $(0, 2)$, $a = 2b$

8. Hyperbola, center at the origin, length of transverse axis is 8, $b = 3a$, parallel to the x-axis

9. Hyperbola, center at $(-3, 1)$, $a = 4$, $b = 2$, transverse axis parallel to the y-axis

10. Hyperbola, center at $(4, 3)$, vertex $(1, 3)$, $b = 2$