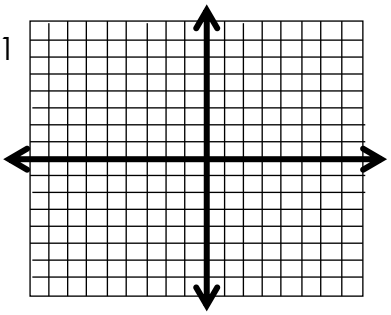
Name:_____ Period:___

Evaluate: Hyperbolas

Graph each of the following and identify the attributes.

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

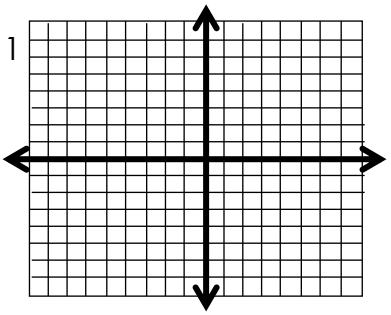


center-

foci -

vertices-

2. $\frac{(y+4)^2}{4} - \frac{(x+3)^2}{36} = 1$



center-

foci-

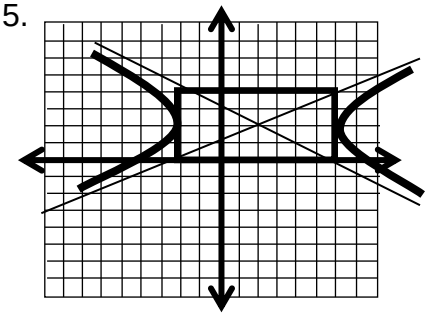
vertices-

For 3 – 6, write equation of each hyperbola using the given information.

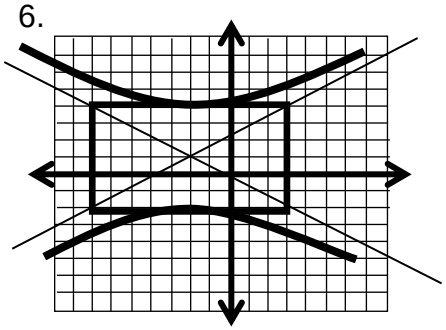
3. Center at (8, -5) with the vertices at (8, 0) and (8, -10) and foci at $(8, -5 \pm \sqrt{30})$

4. Center at (0,0) with the vertices at (4, 0) and (-4, 0) and an asymptote at $y = \frac{3}{2}x$.

5.



6.



7. You are designing a new logo for the gym floor. The pattern is modeled by the equation $\frac{(y+4)^2}{4} - \frac{(x+3)^2}{36} = 1$. The athletic director loves the design except for one thing. He would like for the transverse axis to be 6 units tall. Write the new equation of the logo.

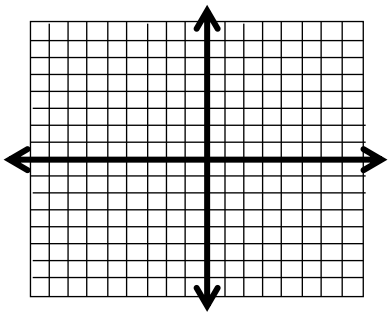
Write each of the following in standard form. Graph. Find the center and other important information. Note they are not necessarily all hyperbolas.

8. $4x^2 - 9y^2 + 16x + 108y = 344$

center

foci

vertices

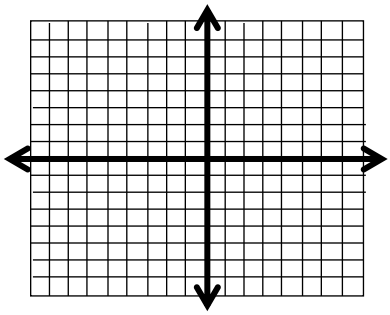


9. $x^2 - y^2 - 14x - 8y + 37 = 0$

center

foci

vertices

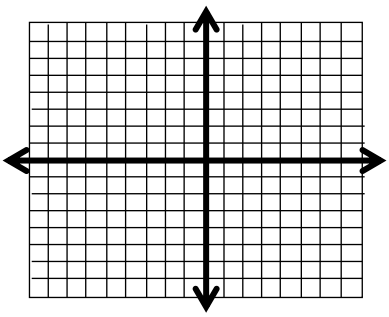


10. $x^2 + y^2 + 8x - 6y - 56 = 0$

center

foci

vertices



11. $5x^2 + 4y^2 - 30x + 24y + 61 = 0$

center

foci

vertices