



9-4 Additional Practice

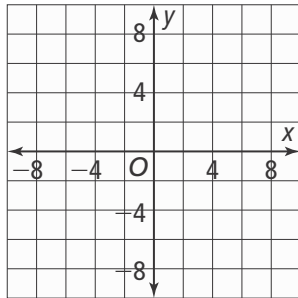
Hyperbolas

Write an equation for the hyperbola with the given information.

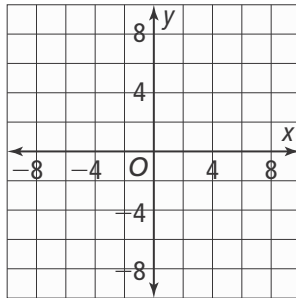
- foci at $(6, 0)$ and $(-6, 0)$ and a constant difference of 10
- foci at $(3, 0)$ and $(-3, 0)$ and a constant difference of 4

Graph each hyperbola.

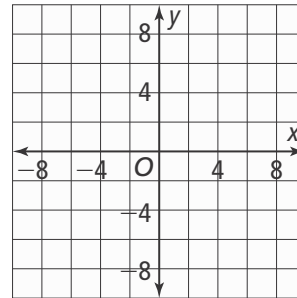
3. $\frac{x^2}{4} - \frac{y^2}{4} = 1$



4. $y^2 - \frac{x^2}{9} = 1$

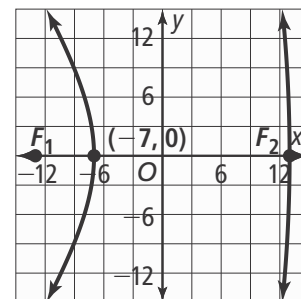


5. $\frac{x^2}{25} - \frac{y^2}{4} = 1$



Write an equation for the hyperbola with the given information.

- vertices at $(4, 0)$ and $(-4, 0)$ and asymptotes $y = \pm \frac{3}{2}x$.
- vertices at $(0, 5)$ and $(0, -5)$ and asymptotes $y = \pm \frac{5}{7}x$.
- The graph shows a two-dimensional side view of a satellite dish and the small reflector inside it. The vertex of the small reflector is 6 in. from focus F_1 and 20 in. from focus F_2 . What equation best models the small reflector?



Which conic section is represented by each equation?

- $3x^2 + 6x + 5y^2 - 20y - 13 = 0$
- $x^2 - 9y^2 + 36y - 45 = 0$
- $x^2 + y^2 - 8x - 4y + 19 = 0$
- Describe how you can find the asymptotes when you know the a and c values for a vertical hyperbola.