

Flashcards: Graphing a Hyperbola

Directions: Find the equations of the following graphs.

1. Hyperbola opening right and left centered at (0, 0) with vertices (1, 0) and (negative 1, 0) and co-vertices at (0, 3) and (0, negative 3).
2. Hyperbola opening up and down, centered at (1, 0) with vertices (1, 2) and (1, negative 2) and co-vertices at (negative 2, 0) and (4, 0).
3. Hyperbola opening up and down centered at (0, 2) with vertices (0, 7) and (0, negative 3) and co-vertices at (negative 1, 2) and (1, 2).
4. Hyperbola opening right and left centered at (negative 3, 1) with vertices (negative 1, 1) and (negative 5, 1) and co-vertices at (negative 3, 5) and (negative 3, negative 3).

Answers:

1. $x^2 - y^2 = 9$
2. $y^2 - 4(x - 1)^2 = 9$
3. $(y - 2)^2 - 25x^2 = 1$
4. $(x + 3)^2 - 4(y - 1)^2 = 16$