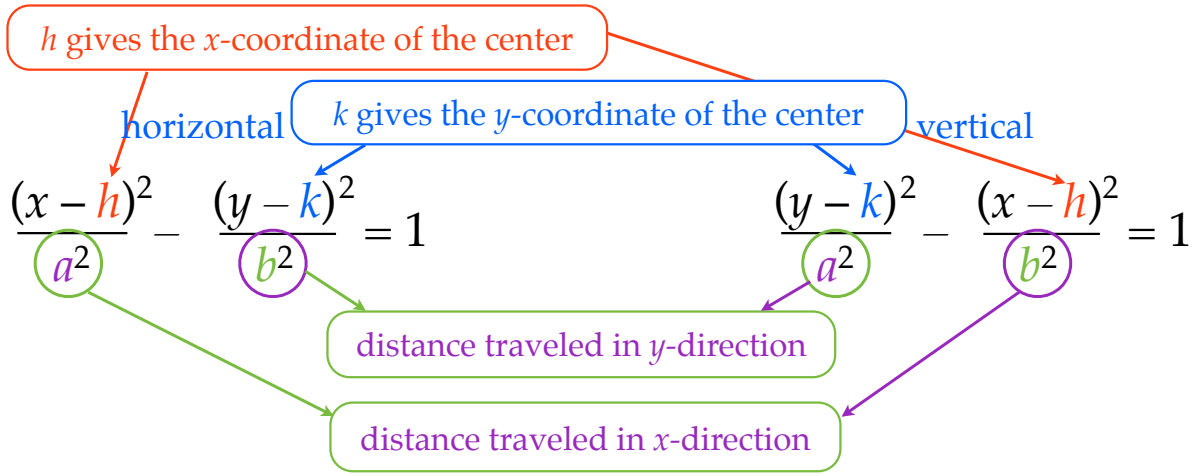
Name _____

Graphing Hyperbolas with Center (h,k)

Date _____ Period _____

Equation of a Hyperbola with center (h,k)



Equation of a Hyperbola with center (h,k)

horizontal	vertical
$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$	$\frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$

Given the equation of a hyperbola, determine if the hyperbola is horizontal or vertical, label h, k, a and b, the distance traveled in x and y directions.

$\frac{(x-3)^2}{16} - \frac{(y-5)^2}{25} = 1$ $\frac{(y+1)^2}{49} - \frac{(x-2)^2}{64} = 1$ $\frac{(x-4)^2}{4} - \frac{(y+3)^2}{9} = 1$

Graph the following hyperbolas

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

Horizontal / Vertical

Center

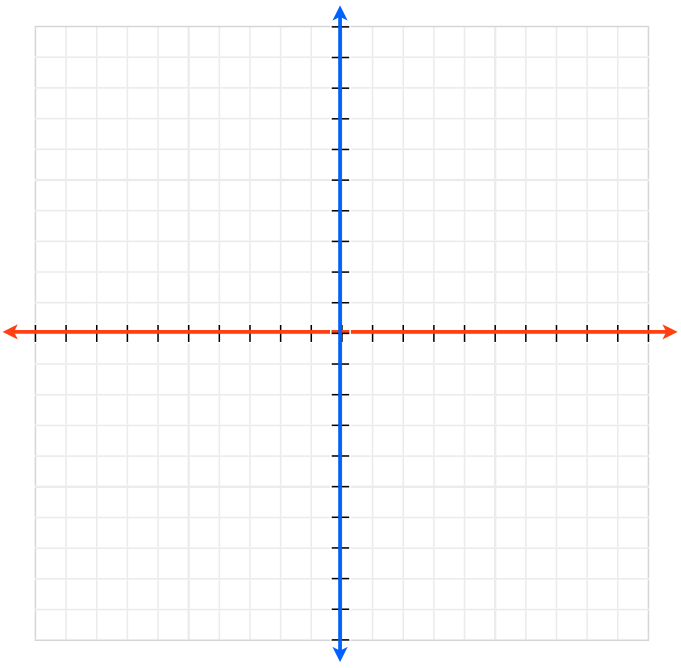
Slope of Asymptotes

Vertices

Co-Vertices

Foci

Domain Range



Graph the following hyperbolas

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

Horizontal / Vertical

Center

Slope of Asymptotes

Vertices

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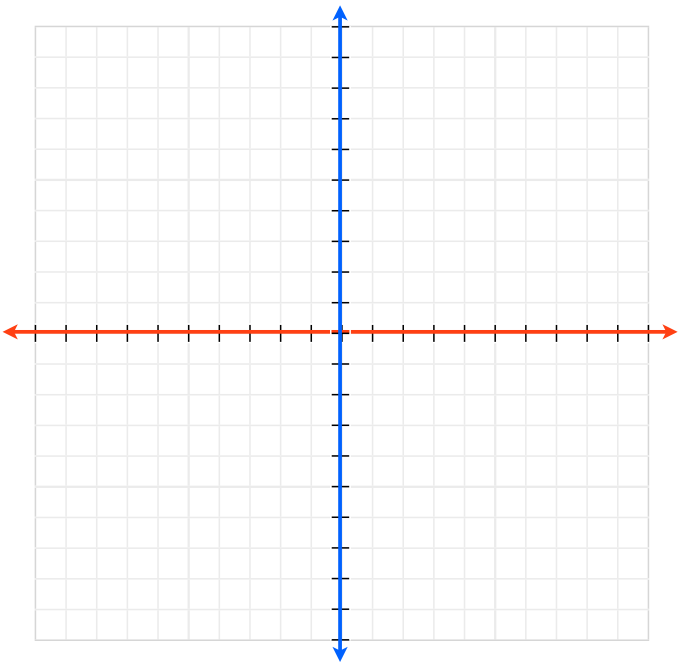
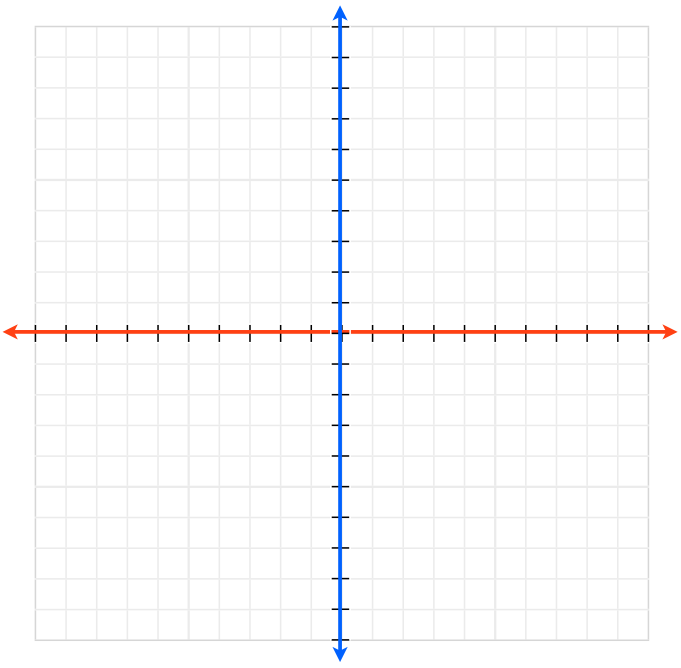
Domain Range



Find the equation of a hyperbola with vertices at (6,2) and (-4,2) and co-vertex (1,4).



Find the equation of a hyperbola with center (-2,3), vertex at (-2,-3) and focus at (-2,-7)