

Equation of an **Ellipse** with center  $(h,k)$ *h* gives the  $x$ -coordinate of the center*k* gives the  $y$ -coordinate of the center

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

*a* gives the distance traveled in  $x$ -direction to get vertices or co-vertices*b* gives the distance traveled in  $y$ -direction to get vertices or co-verticesEquation of an **Ellipse** with center  $(h,k)$ 

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

Given the equation of an ellipse, label *h*, *k*, *a* and *b*.

$$\frac{(x - 3)^2}{16} + \frac{(y - 5)^2}{25} = 1 \quad \frac{(x + 4)^2}{64} + \frac{(y + 1)^2}{4} = 1 \quad \frac{(x - 6)^2}{9} + \frac{y^2}{49} = 1$$

Graph the following ellipse

$$\frac{(x + 1)^2}{25} + \frac{(y + 2)^2}{16} = 1$$

Center

Horizontal/Vertical

Major Axis Length

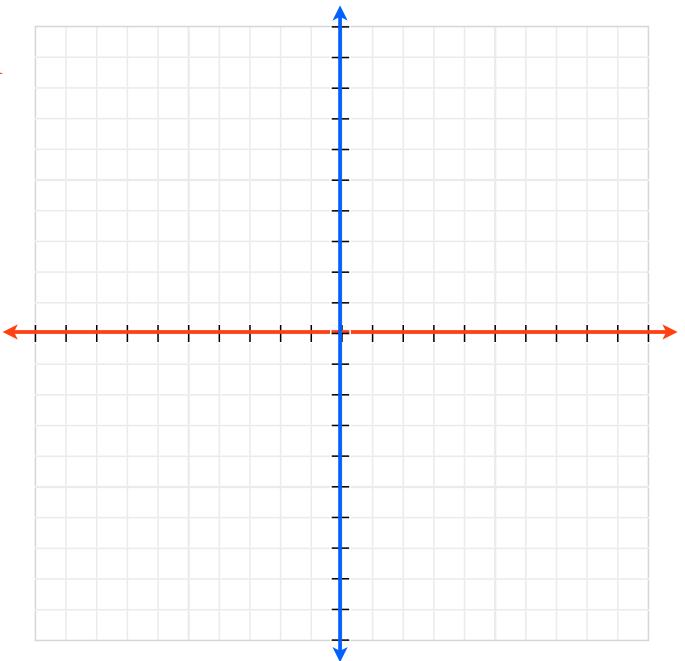
Minor Axis Length

Vertices

Co-Vertices

Foci

Domain  
Range



Graph the following ellipse

$$\frac{(x - 2)^2}{36} + \frac{y^2}{100} = 1$$

Center

Horizontal/Vertical

Major Axis Length

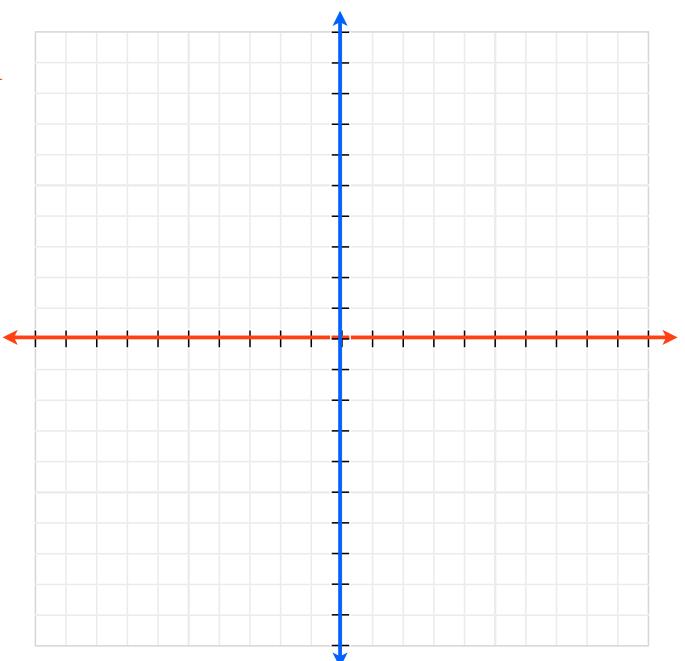
Minor Axis Length

Vertices

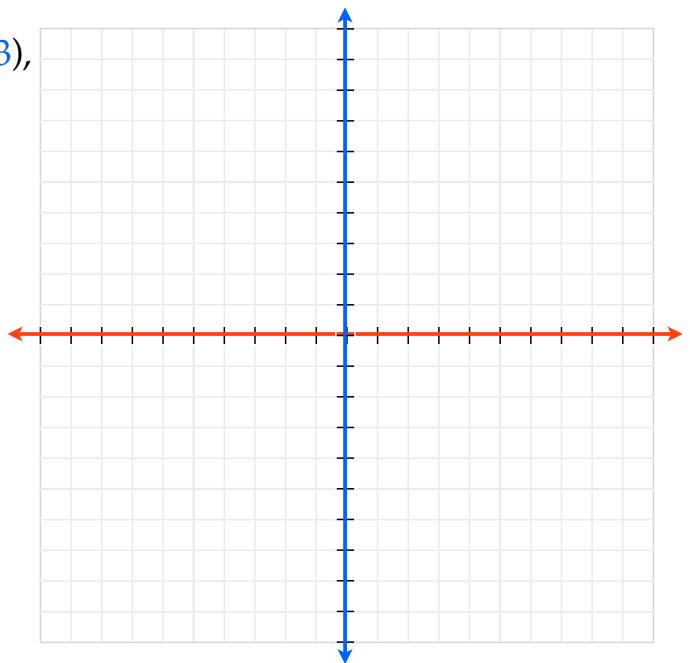
Co-Vertices

Foci

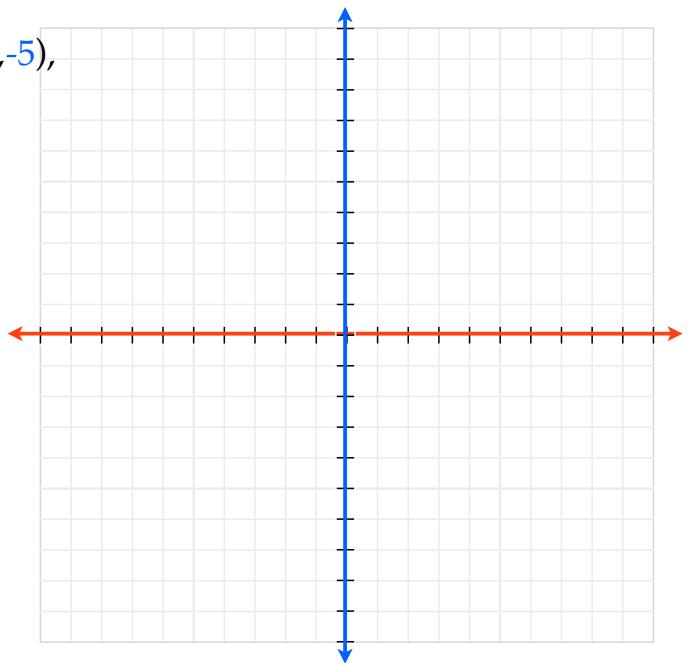
Domain  
Range



Find the equation of an ellipse with center (1,3), vertex at (8,3) and co-vertex at (1,-1)



Find the equation of an ellipse with center (-2,-5), vertex at (-2,0) and focus at (-2,-2)



Equation of an **Ellipse** with center  $(h,k)$

$h$  gives the  $x$ -coordinate of the center

$k$  gives the  $y$ -coordinate of the center

$a$  gives the distance traveled in  $x$ -direction  
to get vertices or co-vertices

$b$  gives the distance traveled in  $y$ -direction  
to get vertices or co-vertices

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