

1. the distance from the center to one of the foci (the distance from the center to a focus).
2. the distance from the center to one of the vertices (the distance from the center to a vertex).
3. conjugate
4. Center:  $(0, 0)$   
Transverse Axis: Horizontal ( $y = 0$ )  
Vertices:  $(\pm 4, 0)$   
Foci:  $(\pm\sqrt{41}, 0)$   
Slope of asymptotes:  $\pm\frac{5}{4}$  (which means equations are  $y = \pm\frac{5}{4}x$ )
5. Equation:  $\frac{(y-3)^2}{4} - \frac{(x+1)^2}{9} = 1$   
Center:  $(-1, 3)$   
Transverse Axis: Vertical ( $x = -1$ )  
Vertices:  $(-1, 5)$  &  $(-1, 1)$   
Foci:  $(-1, 3 \pm \sqrt{13})$   
Slope of asymptotes:  $\pm\frac{2}{3}$
6.  $\frac{x^2}{16} - \frac{y^2}{9} = 1$
7.  $\frac{(y-1)^2}{1} - \frac{(x+2)^2}{8} = 1$
8.  $\frac{(x-3)^2}{4} - \frac{(y-2)^2}{5} = 1$