

Like the ellipse, the hyperbola can also be defined as a set of points in the coordinate plane. A hyperbola is the set of all points  $(x, y)$

in a plane such that the difference of the distances between  $(x, y)$

and the foci is a positive constant.

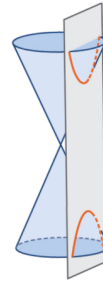


Figure 1: A hyperbola

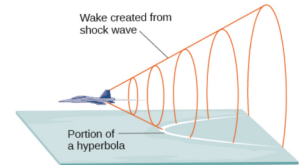
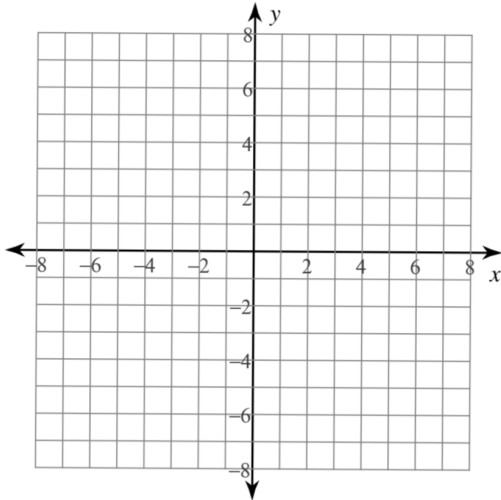


Figure 1: A shock wave intersecting the ground forms a portion of a conic and results in a sonic boom.

# Draw your diagram here

$$\frac{(x-3)^2}{4} - \frac{(y+1)^2}{9} = 1$$



1) Get the equation into standard form if not done already.

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

Standard Form: \_\_\_\_\_

Center: \_\_\_\_\_

Transverse Axis: (Circle One)

Horizontal                  Vertical

A = \_\_\_\_\_ B = \_\_\_\_\_ C = \_\_\_\_\_

Vertices: \_\_\_\_\_

Endpoints: \_\_\_\_\_

Foci: \_\_\_\_\_

Latus Rectum Length: \_\_\_\_\_

Latus Rectum Endpoints:

\_\_\_\_\_

\_\_\_\_\_

Eccentricity: \_\_\_\_\_