

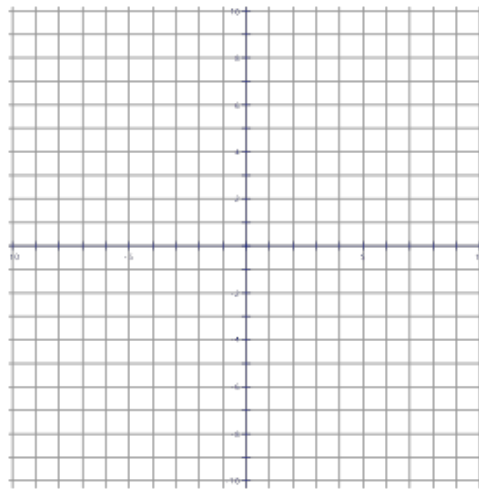
HAT

Chapter 9 REVIEW

2/22/18

A parabola has directrix  $x=7$  and focus  $(-5, 3)$

- Write the equation in standard form.
- Graph. Include the latus rectum.

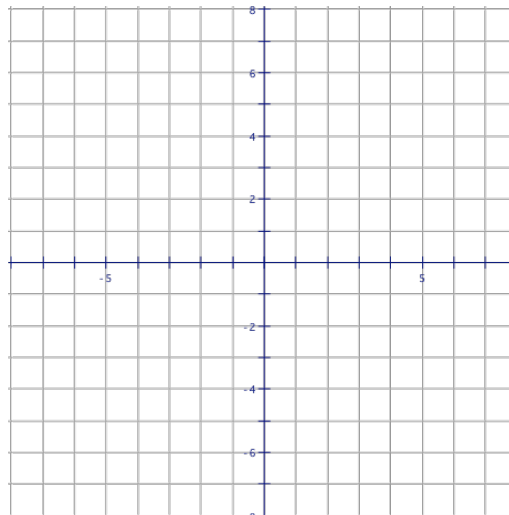


Mr. Schwent and Mrs. Long are in a whispering chamber. The cross section of the whispering chamber is a semi-ellipse with major axis 34 meters long and semi-minor axis 8 meters high.

- Write an equation to model the shape of the room.
- Where and how far apart should each of them stand to hear a whisper from the other?
- What is the height of the room at these spots?

Given the locus of points such that the difference of the distances to  $(-4, -3)$  and  $(6, -3)$  is 6,

- write the equation of the curve
- graph the curve. Include all applicable features (center, vertices, foci, directrix, asymptotes, latus rectum, etc.).
- state the equation of the directrix and/or asymptotes and the eccentricity.



Given  $x^2 + 12y + 13 = -10x$

- Rewrite the equation in standard form.
- State the coordinates of all foci, the equation of the directrix and/or asymptotes, and the length of latus rectum.
- Graph. Include all applicable features.

Robert has a string 30 inches long. He will create a curve by placing each end at a fixed point, pulling the string taut, and tracing the resulting points. He tacks down one end of the string at the focus  $(3, 0)$ .

For each given eccentricity,

- identify the type of curve Robert will create
- determine the location of the second focus
- write the equation of the curve

a)  $e=0$

b)  $e=\frac{3}{5}$

An ellipse centered at the origin has major axis of length 20 and passes through the point  $(5, 4\sqrt{3})$

Given that the foci are on the x-axis, find their coordinates.

Given  $9y^2 - 27x^2 - 54x + 90y - 126 = 0$

- Rewrite the equation in standard form.
- State the eccentricity.
- State the coordinates of the foci.
- State the equations of the asymptotes.



Solve. 
$$\begin{cases} x^2 + y^2 = 25 \\ 3x^2 - y^2 = 11 \end{cases}$$

Graph. 
$$\begin{cases} x^2 + y^2 > 25 \\ 3x^2 - y^2 \leq 11 \end{cases}$$

Write the equation of the curve with vertices at  $(0, 5)$  and  $(0, -7)$  given:

$$e = \frac{3}{4}$$

$$e = \frac{3}{2}$$

