

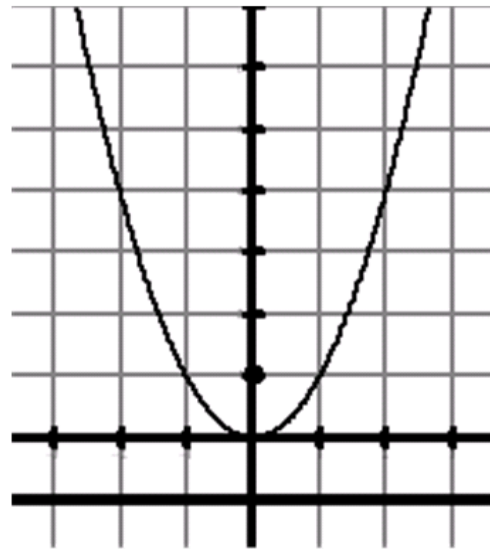
**Parabolas**  
**Pages: 735-743**  
**Section: 10.2**

[Notes](#)

[Reset](#)

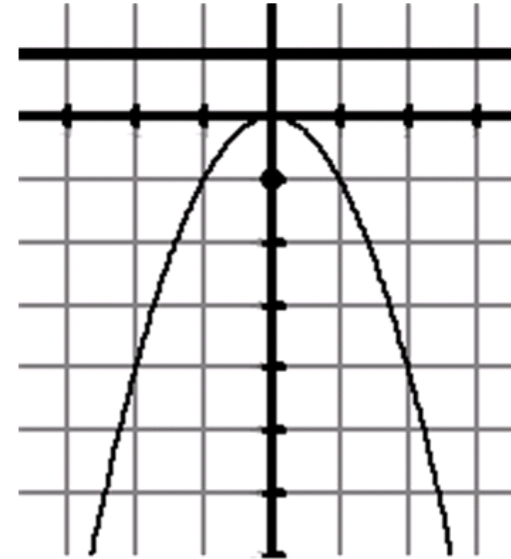
**Label the vertex, focus, and directrix and identify where "p" is found on the graph.**

Vertical Parabolas



$$(x-h)^2 = 4p(y-k)$$

Vertical Axis &  $p > 0$



$$(x-h)^2 = 4p(y-k)$$

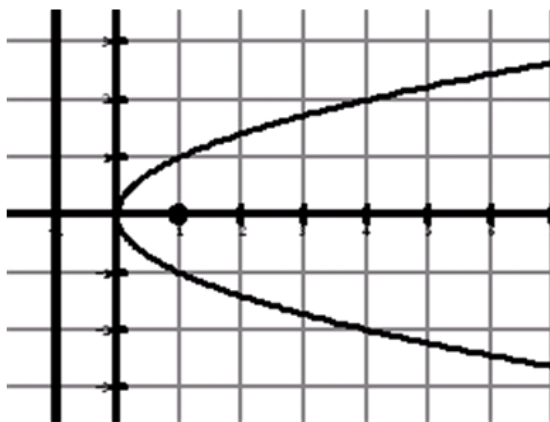
Vertical Axis &  $p < 0$

Notes

Reset

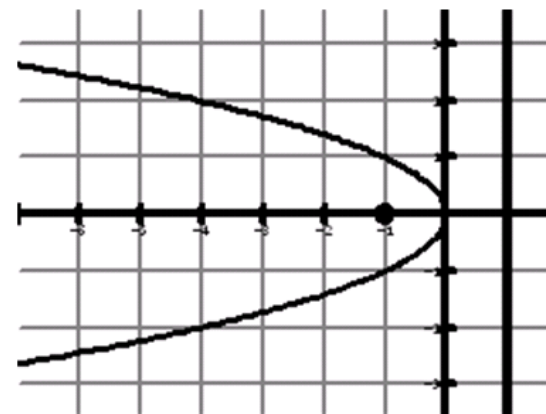
**Label the vertex, focus, and directrix and identify where "p" is found on the graph.**

### Horizontal Parabolas



$$(y - k)^2 = 4p(x - h)$$

Horizontal Axis &  $p > 0$



$$(y - k)^2 = 4p(x - h)$$

Horizontal Axis &  $p < 0$

Notes

Reset

## Example 1 - a

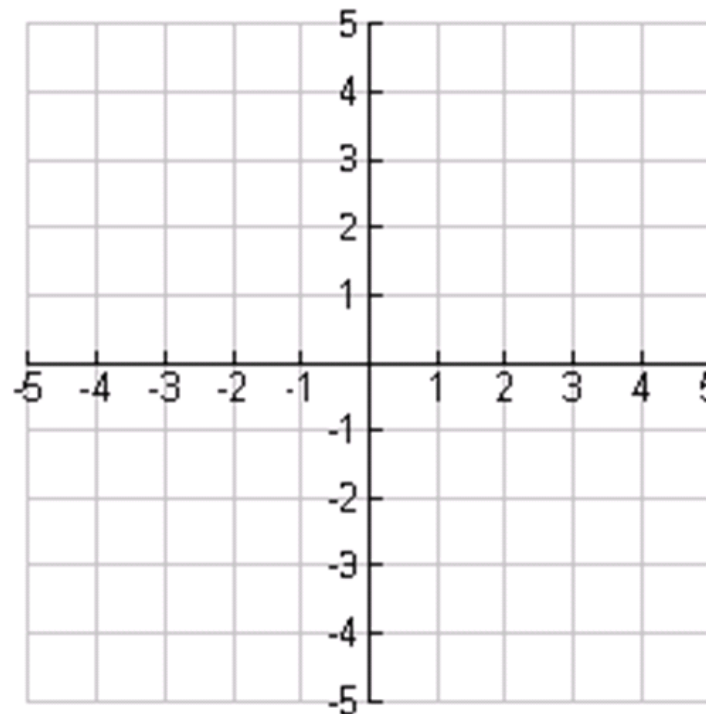
Find the vertex, focus, and directrix of the parabola and sketch its graph.

$$y = -2x^2$$

vertex: \_\_\_\_\_

focus: \_\_\_\_\_

directrix: \_\_\_\_\_



Notes

Reset

## Example 1 - b

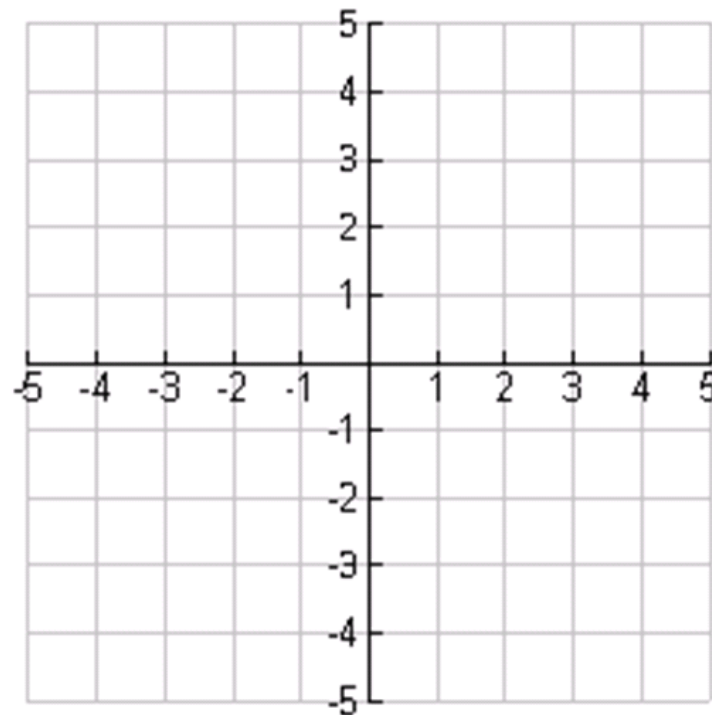
Find the vertex, focus, and directrix of the parabola and sketch its graph.

$$y^2 = 3x$$

vertex: \_\_\_\_\_

focus: \_\_\_\_\_

directrix: \_\_\_\_\_



Notes

Reset

## Example 1 - c

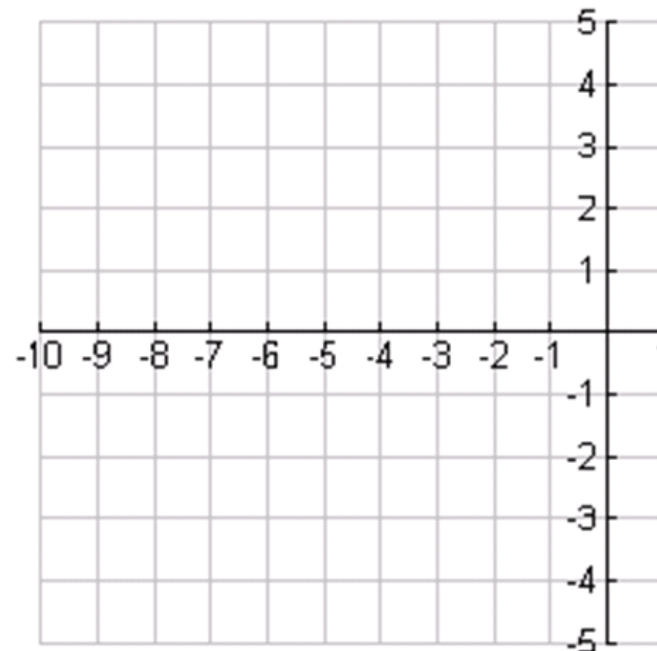
Find the vertex, focus, and directrix of the parabola and sketch its graph.

$$(x+5)+(y-1)^2=0$$

vertex: \_\_\_\_\_

focus: \_\_\_\_\_

directrix: \_\_\_\_\_



Notes

Reset

## Example 1 - d

First, let's complete the square:

$$y^2 - 4y - 4x = 0$$

Notes

Reset

### Example 1 - d

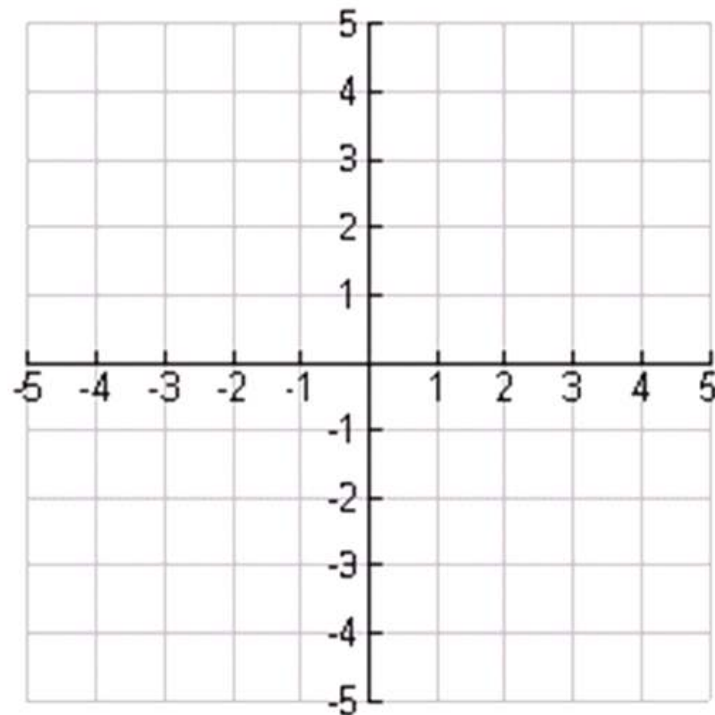
$$y^2 - 4y - 4x = 0$$

Find the vertex, focus, and directrix of the parabola and sketch its graph.

vertex: \_\_\_\_\_

focus: \_\_\_\_\_

directrix: \_\_\_\_\_



Notes

Reset

## Example 1 - e

First, let's complete the square:

$$x = \frac{1}{4}(y^2 + 2y + 33)$$

Notes

Reset

### Example 1 - e

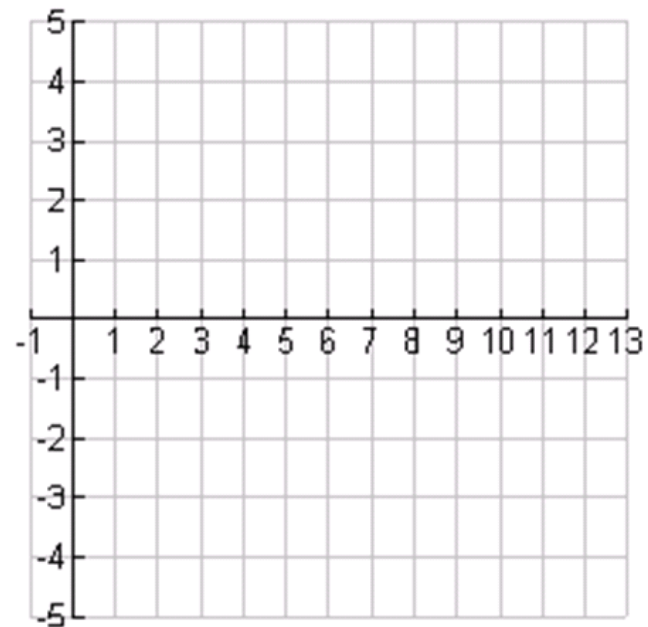
$$x = \frac{1}{4}(y^2 + 2y + 33)$$

Find the vertex, focus, and directrix of the parabola and sketch its graph.

vertex: \_\_\_\_\_

focus: \_\_\_\_\_

directrix: \_\_\_\_\_

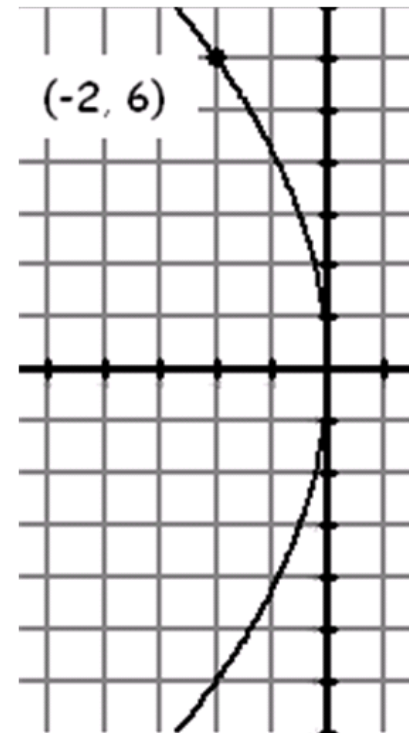


Notes

Reset

## Example 2 - a

Find the standard form of the equation of the ellipse with the given characteristics and center.

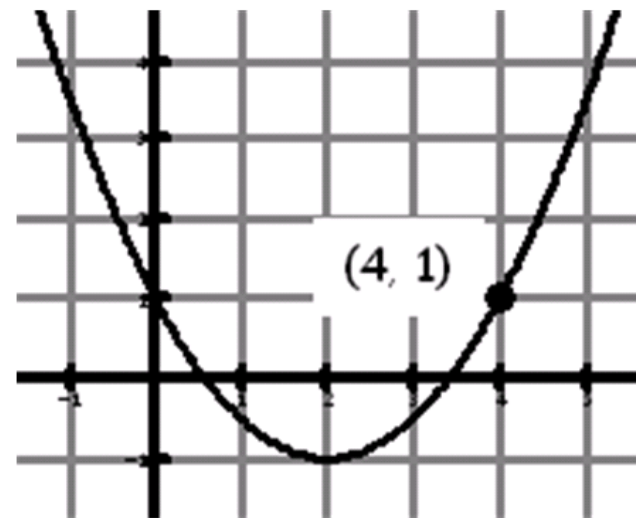


Notes

Reset

## Example 2 - b

Find the standard form of the equation of the ellipse with the given characteristics and center.



Notes

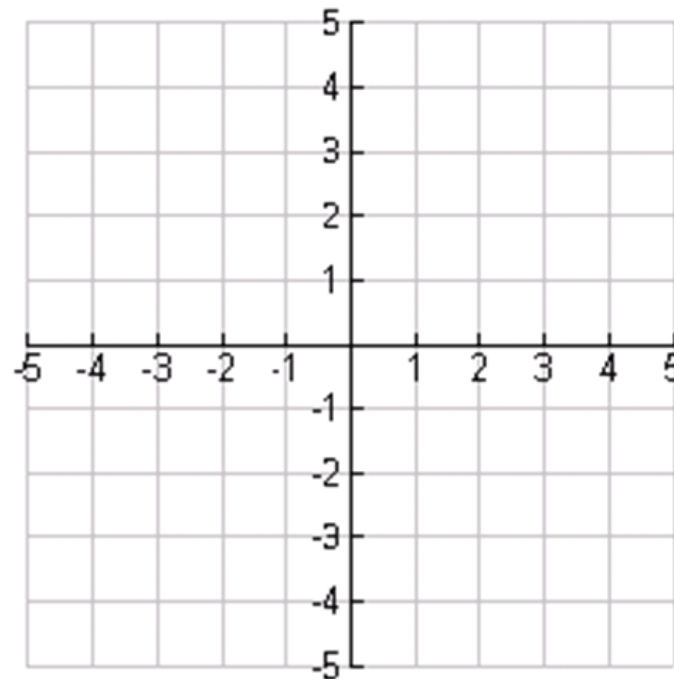
Reset

## Example 2 - c

Find the standard form of the equation of the ellipse with the given characteristics and center. Sketch a graph to help.

c. **Vertex:  $(0, 0)$**

**Focus:  $\left(\frac{5}{2}, 0\right)$**



Notes

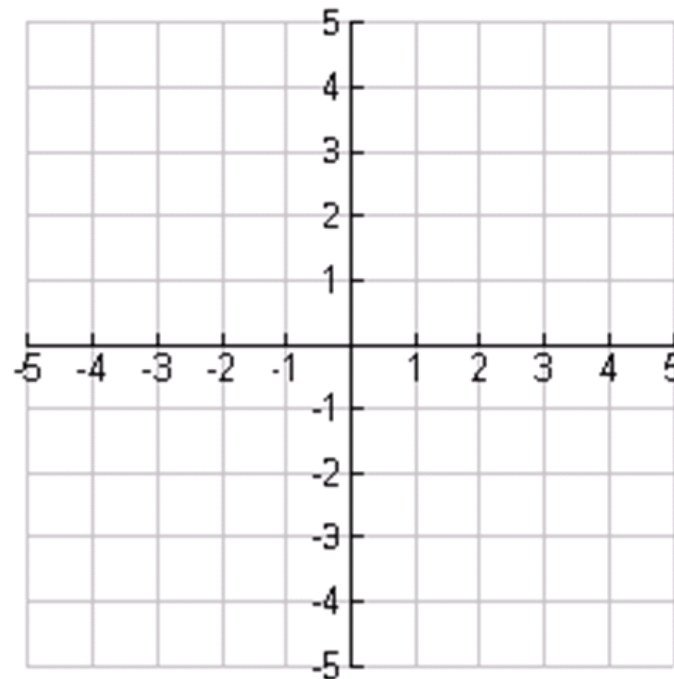
Reset

## Example 2 - d

Find the standard form of the equation of the ellipse with the given characteristics and center. Sketch a graph to help.

**d. Vertex:  $(2, 5)$**

**Directrix:  $y = 3$**



Notes

Reset