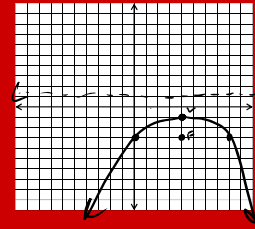


Graph the parabola:

$$(x-4)^2 = -8(y+1)$$

Graph the parabola:

$$(x-4)^2 = -8(y+1)$$



vertex: (4, -1)  
 $4p = -8$   
 $p = -2$

Write the equation of the conic in Standard form:

$$3x^2 - 5y^2 + 12x - 10y + 2 = 0$$

Write the equation of the conic in Standard form:

$$3x^2 + 5y^2 + 12x - 10y + 2 = 0$$

$$3x^2 + 12x - 5y^2 - 10y = -2$$

$$3(x^2 + 4x + \frac{4}{3}) - 5(y^2 + 2y + \frac{1}{5}) = -2 + \frac{12}{3} - \frac{5}{5}$$

$$3(x+2)^2 - 5(y+1)^2 = 15$$

$$\frac{(x+2)^2}{5} - \frac{(y+1)^2}{3} = 1$$

Write the equation of the conic in parametric form:

$$\frac{(x-4)^2}{16} - \frac{(y+1)^2}{36} = 1$$

Write the equation of the conic in parametric form:

$$\frac{(x-4)^2}{16} - \frac{(y+1)^2}{36} = 1$$

$$x = 4 + 4 \sec t$$

$$y = -1 + 6 \tan t$$

Find the coordinates of the Focal points of the shape:

$$\frac{(x-4)^2}{16} - \frac{(y+1)^2}{4} = 1$$

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$$\frac{(x-4)^2}{16} - \frac{(y+1)^2}{4} = 1$$

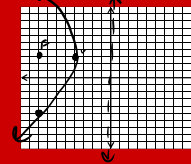
$c^2 = 16 + 4$   
 $c^2 = 20$       $c = \sqrt{20} = 2\sqrt{5}$   
 $(4 + 2\sqrt{5}, -1), (4 - 2\sqrt{5}, -1)$

Graph the parabola:

$$(y-3)^2 = -16(x+4)$$

Graph the parabola:

$$(y-3)^2 = -16(x+4)$$



*opens left*  
 vertex:  $(-4, 3)$   
 $4p = -16$   
 $p = -4$   
 $FW = 16$

Write the equation of an hyperbola that has foci at  $(0,6)$  and  $(0,-6)$  and the length of the transverse axis is 8.

Write the equation of an hyperbola that has foci at  $(0,6)$  and  $(0,-6)$  and the length of the transverse axis is 8.

$c = 6$     $a = 4$     $b = ??$   
 $36 = 16 + b^2$   
 $b^2 = 20$

$$\frac{y^2}{16} - \frac{x^2}{20} = 1$$

Write the parametric equations of the conic section:

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

Write the parametric equations of the conic section:

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

← hyperbola

$$\begin{aligned} x &= -1 + 3 \tan t \\ y &= -3 + 2 \sec t \end{aligned}$$

Write the equation of the conic section in standard form:

$$5y^2 - 6x^2 + 12x + 20y + 44 = 0$$

Write the equation of the conic section in standard form:

$$\begin{aligned} 5y^2 - 6x^2 + 12x + 20y + 44 &= 0 \\ 5y^2 + 20y - 6x^2 + 12x &= -44 \\ 5(y^2 + 4y + \underline{4}) - 6(x^2 - 2x + \underline{1}) &= -44 + \underline{20} + \underline{-6} \\ 5(y+2)^2 - 6(x-1)^2 &= -30 \\ \frac{(x-1)^2}{5} - \frac{(y+2)^2}{6} &= 1 \end{aligned}$$

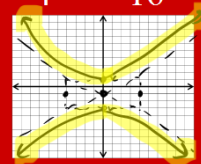
Graph the hyperbola:

$$\frac{(y+1)^2}{4} - \frac{x^2}{16} = 1$$

Graph the hyperbola:

vert. cal →  $\frac{(y+1)^2}{4} - \frac{x^2}{16} = 1$

center: (0, -1)  
a = 2  
b = 4



Write the conic section in standard form:

$$y^2 - 8y - 8x = -24$$

Write the conic section in standard form:

$$\begin{aligned} y^2 - 8y - 8x &= -24 \\ y^2 - 8y &= 8x - 24 \\ y^2 - 8y + \underline{16} &= 8x - 24 + \underline{16} \\ (y-4)^2 &= 8x - 8 \\ \boxed{(y-4)^2} &= \boxed{8(x-1)} \end{aligned}$$

Write the parametric equations for the conic section:

$$\frac{(x+1)^2}{64} - \frac{(y-11)^2}{36} = 1$$

Write the parametric equations for the conic section:

$$\frac{(x+1)^2}{64} - \frac{(y-11)^2}{36} = 1 \quad \text{center: } (-1, 11)$$

$$\boxed{\begin{aligned} x &= -1 + 8 \sec t \\ y &= 11 + 6 \tan t \end{aligned}}$$

Find the coordinates of the foci of the conic section:

$$\frac{(x-4)^2}{4} - \frac{(y+2)^2}{36} = 1$$

Find the coordinates of the foci of the conic section:

horizontal

$$\frac{(x-4)^2}{4} - \frac{(y+2)^2}{36} = 1 \quad \text{center: } (4, -2)$$

$$\begin{aligned} c^2 &= a^2 + b^2 \\ c^2 &= 4 + 36 \\ c^2 &= 40 \\ c &= 2\sqrt{10} \end{aligned}$$

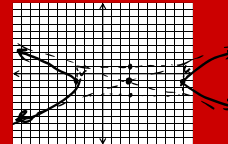
$$\boxed{\begin{aligned} \text{foci: } &(4 + 2\sqrt{10}, -2) \\ &(4 - 2\sqrt{10}, -2) \end{aligned}}$$

Graph the hyperbola:

$$\frac{(x-3)^2}{36} - \frac{y^2}{4} = 1$$

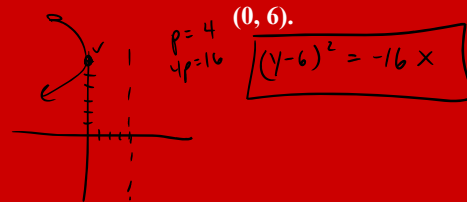
Graph the hyperbola:

horizontal  $\frac{(x-3)^2}{36} - \frac{y^2}{4} = 1$  center: (3,0)  
 $a=6$   
 $b=2$



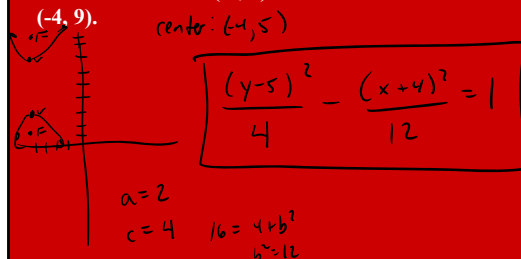
Write the equation of a parabola that has a directrix at  $x = 4$  and the vertex is at the point  $(0, 6)$ .

Write the equation of a parabola that has a directrix at  $x = 4$  and the vertex is at the point  $(0, 6)$ .



Write the equation of a hyperbola that has endpoints of the transverse axis at  $(-4, 3)$  and  $(-4, 7)$  and the foci are at  $(-4, 1)$  and  $(-4, 9)$ .

Write the equation of a hyperbola that has endpoints of the transverse axis at  $(-4, 3)$  and  $(-4, 7)$  and the foci are at  $(-4, 1)$  and  $(-4, 9)$ .



Write the parametric equations of  
the conic section:

$$(x-4)^2 = -4(y+1)$$

Write the parametric equations of  
the conic section:

$$(x-4)^2 = -4(y+1)$$

$$x = 4 + 2t$$

$$y = -1 + t^2$$