

Question

1 2 3 4 5 6 7 8 9 10 11 12 13

**Description**

This homework assignment covers Chapter 11: 11.1, 11.2, 11.3... Please work as many problems as possible and turn in your work by the due date. Late homework is NOT accepted. As always, if you need anything, please email me Joshua.Patterson@tamuc.edu

1. Question Details

SPreCalc6 11.1.002. [2710503]

The graph of the equation  $x^2 = 4py$  is a parabola with focus  $F(x, y) = ( \quad )$  and directrix  $y = \quad$ . So the graph of  $x^2 = 8y$  is a parabola with focus  $F(x, y) = ( \quad )$  and directrix  $y = \boxed{\quad}$ .

2. Question Details

SPreCalc6 11.1.029. [2715757]

Find an equation for the parabola that has its vertex at the origin and satisfies the given condition.  
Focus  $F(0, 2)$

3. Question Details

SPreCalc6 11.1.031. [1615950]

Find an equation for the parabola that has its vertex at the origin and satisfies the given condition.  
Focus  $F(-5, 0)$

4. Question Details

SPreCalc6 11.1.034.MI. [2715777]

Find an equation for the parabola that has its vertex at the origin and satisfies the given condition.  
Directrix  $y = 7$

5. Question Details

SPreCalc6 11.1.038.MI. [2715772]

Find an equation for the parabola that has its vertex at the origin and satisfies the given condition.  
Directrix has  $y$ -intercept  $4$

6. Question Details

SPreCalc6 11.2.002. [2735529]

The graph of the equation  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  with  $a > b > 0$  is an ellipse with vertices  $(x, y) = ( \quad )$  and  $(x, y) = (-a, 0)$  and foci  $(\pm c, 0)$ , where  $c = \quad$ . So the graph of  $\frac{x^2}{10^2} + \frac{y^2}{8^2} = 1$  is an ellipse with vertices  $(x, y) = ( \quad )$  (larger  $x$ -value) and  $(x, y) = ( \quad )$  (smaller  $x$ -value) and foci  $(x, y) = ( \quad )$  (larger  $x$ -value) and  $(x, y) = ( \quad )$  (smaller  $x$ -value).

Find an equation for the ellipse that satisfies the given conditions.

Length of major axis: 8, length of minor axis: 6, foci on x-axis

Find an equation for the ellipse that satisfies the given conditions.

Foci:  $(\pm 7, 0)$ , length of major axis: 16

Find an equation for the ellipse that satisfies the given conditions.

Endpoints of major axis:  $(\pm 10, 0)$ , distance between foci: 4

The graph of the equation  $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$  with  $a > 0, b > 0$  is a hyperbola with vertices  $(x, y) = ($    $)$  and

$(x, y) = (-a, 0)$  and foci  $(x, y) = (\pm c, 0)$ , where  $c =$

. So the graph of  $\frac{x^2}{4^2} - \frac{y^2}{3^2} = 1$  is a hyperbola with vertices

$(x, y) = ($    $)$  (larger x-value) and  $(x, y) = ($    $)$  (smaller x-value) and foci

$(x, y) = ($    $)$  (larger x-value) and  $(x, y) = ($    $)$  (smaller x-value).

Find an equation for the hyperbola that satisfies the given conditions.

Foci:  $(\pm 10, 0)$ , vertices:  $(\pm 6, 0)$

Find an equation for the hyperbola that satisfies the given conditions.

Foci:  $(\pm 11, 0)$ , vertices:  $(\pm 8, 0)$

Find an equation for the hyperbola that satisfies the given conditions.

Foci:  $(9, 0)$ , hyperbola passes through  $(12, 3)$