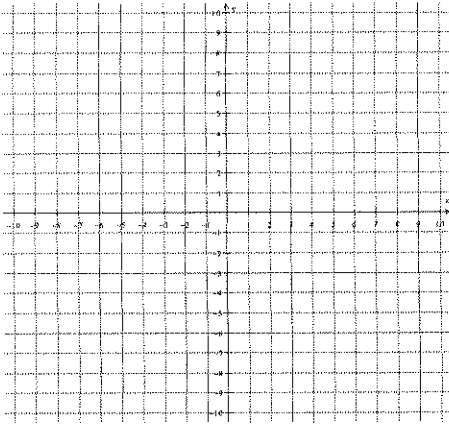


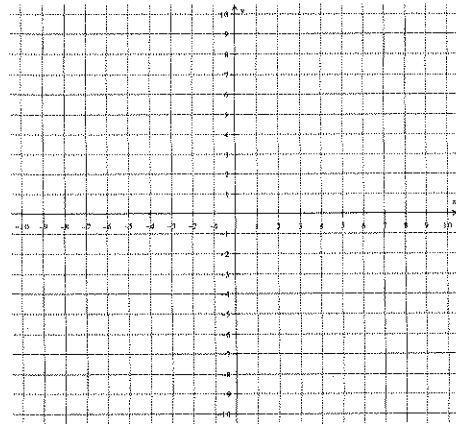
# Extra Practice Worksheet 4.4

Name \_\_\_\_\_

1. Write the equation of a circle in standard form with diameter endpoints at  $(-4, -7)$  and  $(6, 5)$ . Graph.

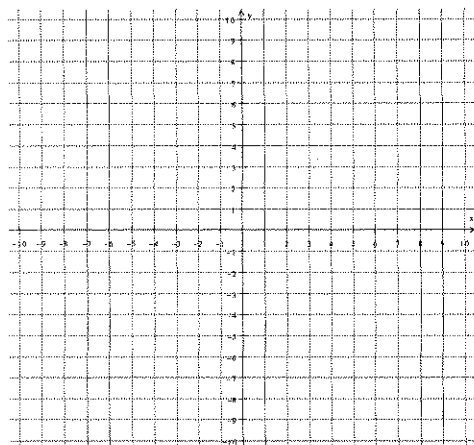


2. Find the center, vertices and foci. Graph.  
 $4x^2 - 25y^2 - 50y - 125 = 0$



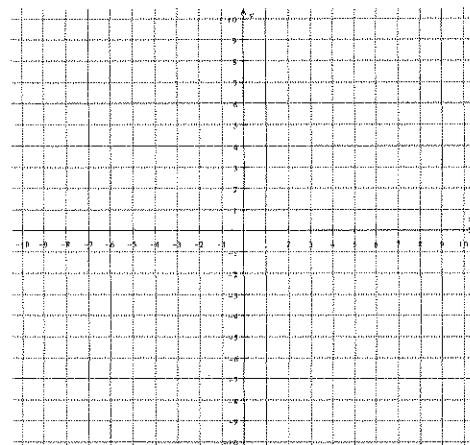
3. Find the center, vertices and foci. Graph.

$$\frac{(x+6)^2}{16} + \frac{(y-3)^2}{9} = 1$$



4. Find the vertex, focus and directrix. Graph.

$$y^2 - 2y - 4x - 15 = 0$$



# Extra Practice 4.4

## Worksheet 8.5

Name \_\_\_\_\_

1. Find the center and radius of a circle with diameter endpoints at  $(-4, -7)$  and  $(6, 5)$ . Graph.

$$\left( \frac{-4+6}{2}, \frac{-7+5}{2} \right) \quad \text{center } (1, -1)$$

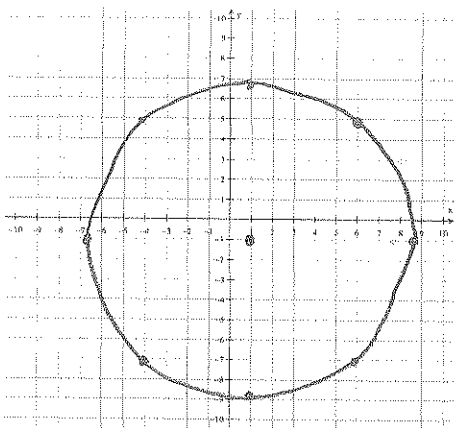
$$\text{radius} = \sqrt{61}$$

$$r = \sqrt{(6-1)^2 + (5+1)^2}$$

$$r = \sqrt{25+36} \quad (x-1)^2 + (y+1)^2 = 61$$

$$r = \sqrt{61}$$

$$\approx 7.8$$



2. Find the center, vertices and foci. Graph.

$$4x^2 - 25y^2 - 50y - 125 = 0$$

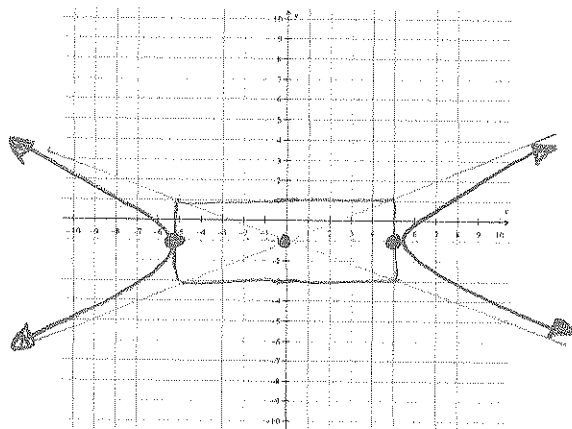
$$4x^2 - 25(y^2 + 2y) = 125$$

$$4x^2 - 25(y+1)^2 = 125 - 25$$

$$4x^2 - 25(y+1)^2 = 100$$

$$\frac{x^2}{25} - \frac{(y+1)^2}{4} = 1$$

Center  $(0, -1)$   
 Vertices:  $(5, -1)$   
 $(-5, -1)$



3. Find the center, vertices and foci. Graph.

$$\frac{(x+6)^2}{16} + \frac{(y-3)^2}{9} = 1$$

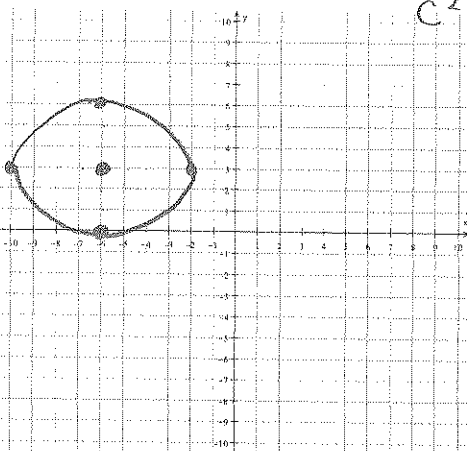
Center  $(-6, 3)$   
 Vertices:  $(-10, 3)$   $(-2, 3)$   
 Foci:  $(-6 + \sqrt{7}, 3)$   $(-6 - \sqrt{7}, 3)$

$$c^2 = a^2 - b^2$$

$$c^2 = 16 - 9$$

$$c^2 = 7$$

$$c = \sqrt{7}$$



4. Find the vertex, focus and directrix. Graph.

$$y^2 - 2y - 4x - 15 = 0$$

$$y^2 - 2y = 4x + 15$$

$$(y-1)^2 = 4x + 15 + 1$$

$$(y-1)^2 = 4x + 16$$

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

Vertex:  $(-4, 1)$   
 Focus:  $(-3, 1)$   
 Directrix:  $x = -5$   
 focal width = 4

