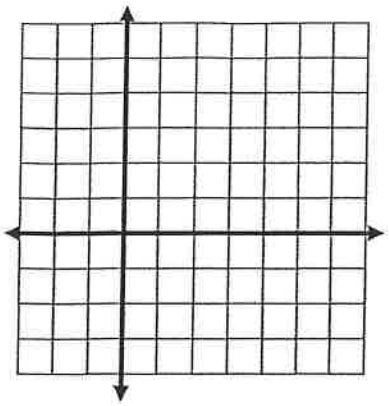
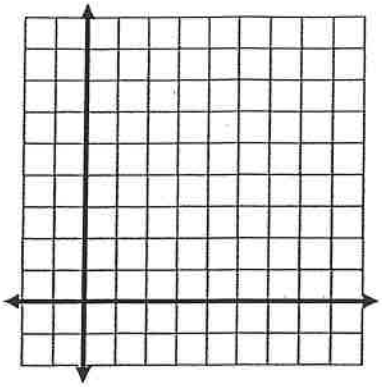
Algebra 2: Circles Review Name _____ Date: _____ Hour: ____

1) Graph the following circle:

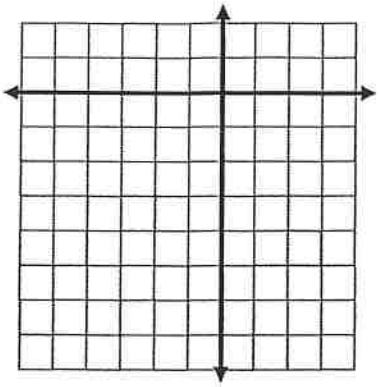
a. $(x - 3)^2 + (y + 1)^2 = 4$



b. $(x - 2)^2 + (y - 5)^2 = 9$



c. $(y + 4)^2 + (x + 2)^2 = 16$



2) For each circle: Identify its center and radius.

a. $(x + 3)^2 + (y - 1)^2 = 4$

Center:_____

Radius:_____

b. $x^2 + (y - 3)^2 = 144$

Center:_____

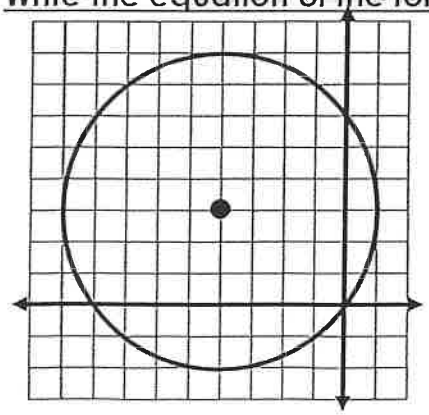
Radius:_____

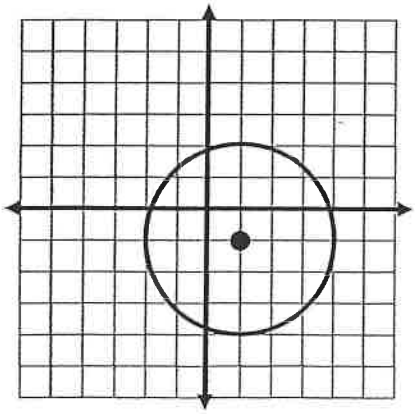
c. $(y + 8)^2 + (x + 2)^2 = 72$

Center:_____

Radius:_____

3) Write the equation of the following circles:





4) Give the equation of the circle whose:

a. center is (5,-3) and goes through (2,5)

b. center is (-1, 3) and goes through (4, -2)

5) Complete the square to write in standard form, center, and radius of the following circles:

5a) $x^2 + y^2 - 4x + 8y - 5 = 0$

Center:_____

Radius:_____

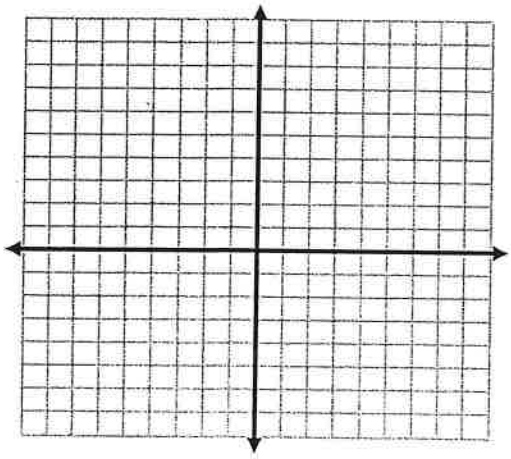
5b) $x^2 + y^2 - 6y + 8x - 11 = 0$

Center:_____

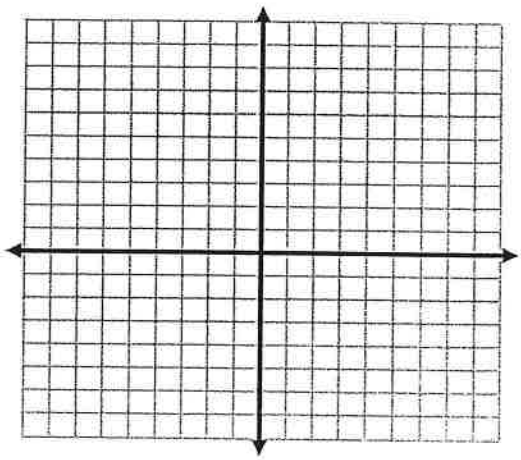
Radius:_____

6) Graph the following circles:

6a) $x^2 - 2x + y^2 + 8y - 8 = 0$



6b) $x^2 + y^2 - 6x + 4y - 3 = 0$



7. Name the center (coordinate point) and the values for a and b of the following ellipses.

7a.) $\frac{(x-2)^2}{16} + \frac{(y+6)^2}{121} = 1$

Center:_____

a = _____

b = _____

7b.) $\frac{x^2}{36} + \frac{(y+9)^2}{9} = 1$

Center:_____

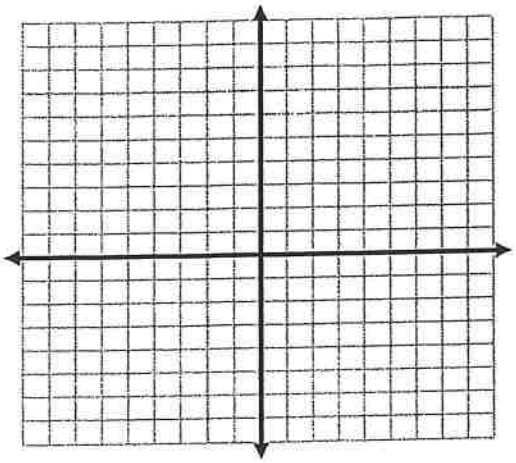
a = _____

b= _____

9. Graph the following ellipses and find the foci.

a.

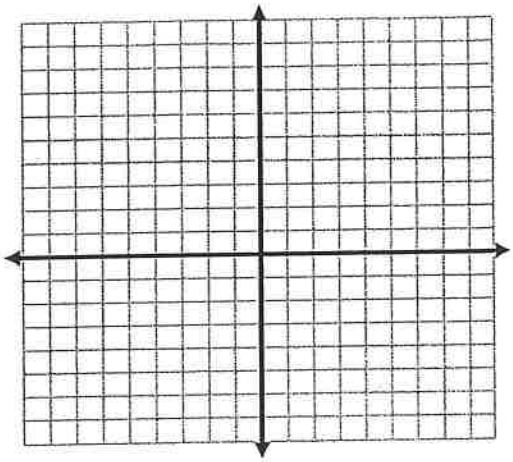
$$\frac{(x-2)^2}{25} + \frac{(y-2)^2}{16} = 1$$



Foci: _____

8b.

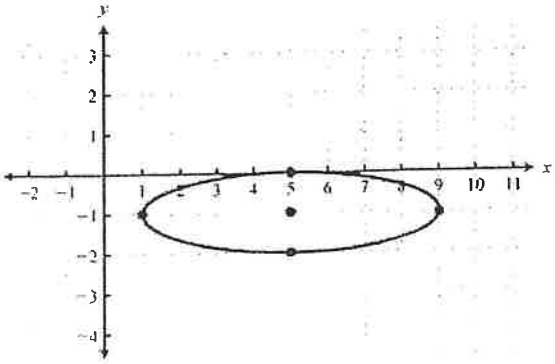
$$\frac{(x+2)^2}{25} + \frac{(y-1)^2}{9} = 1$$



Foci: _____

10. Write the equation of the following ellipses and list the vertices and co- vertices

10a)

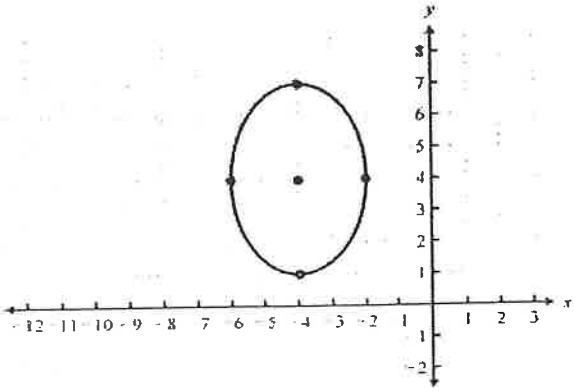


Equation: _____

Vertices: _____

Co-vertices: _____

10b.)



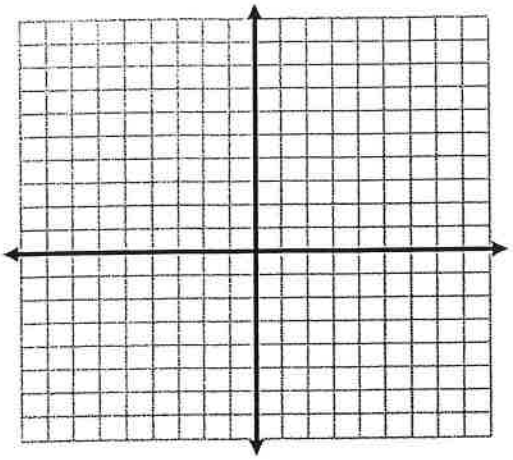
Equation: _____

Vertices: _____

Co-vertices: _____

11.) Write the equations and graph the ellipses with the following:

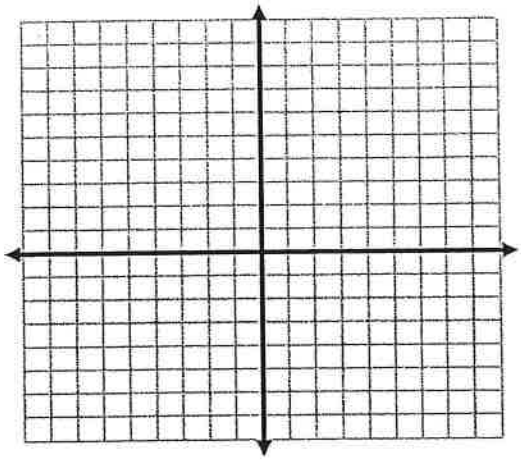
11a.) Center: (1,5)
Length of major axis: 8
Length of minor axis: 4



Equation: _____

11b.) Vertices: (-1, 14) (-1, -8)

Co-vertices: (9,3) (-11,3)

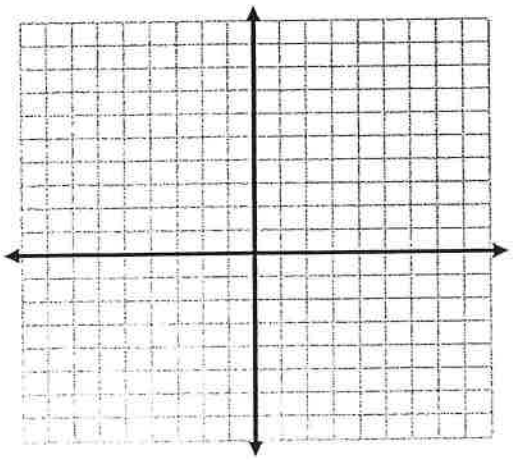


Equation: _____

11c.)

Vertices: (-2, -4) (-12, -4)

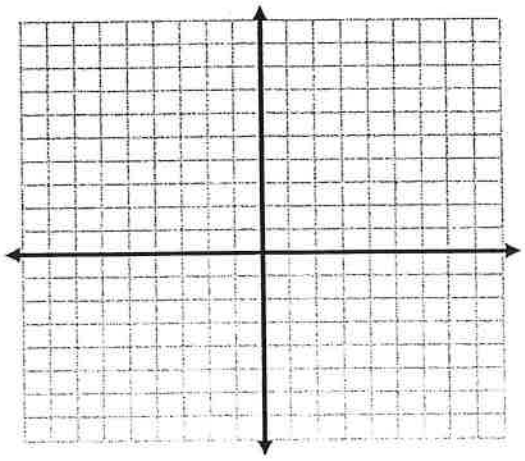
Foci: (-3, -4) (-11, -4)



Equation: _____

11d) CHALLENGE: Complete the square to write the equation of the ellipse;

$4x^2 + y^2 - 32x - 14y + 49 = 0$



Equation: _____