Ellipses

Name _____

For each problem, find the center, which axis the major axis is parallel to, distance left/right from center, distance up/down from the center, and the length of the major axis and the length of the minor axis. Then sketch the graph.
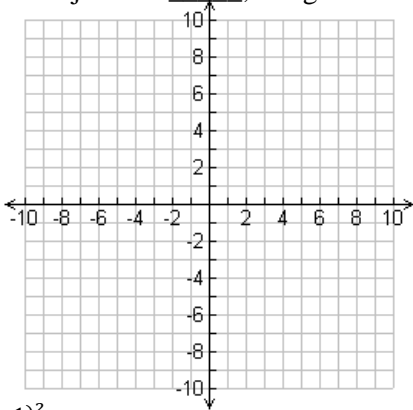
1. $\frac{(x+3)^2}{25} + \frac{(y+2)^2}{1} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____

Length of major axis:_____; Length minor axis:_____
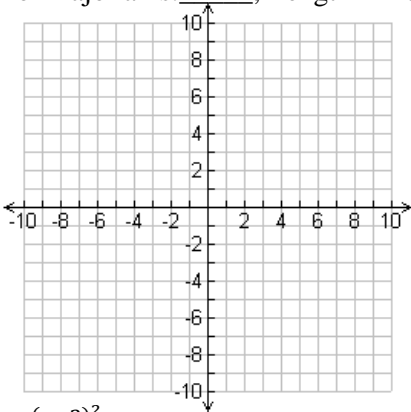

2. $\frac{x^2}{49} + \frac{(y-1)^2}{4} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____
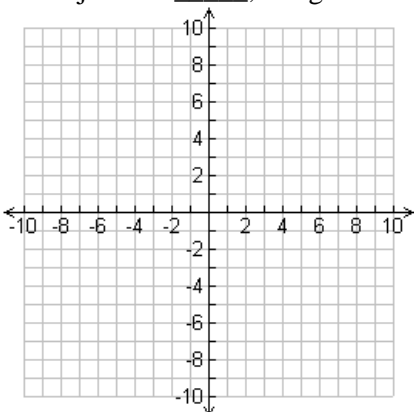
Length of major axis:_____; Length minor axis:_____

3. $\frac{(x+1)^2}{81} + \frac{(y-2)^2}{16} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____

Length of major axis:_____; Length minor axis:_____
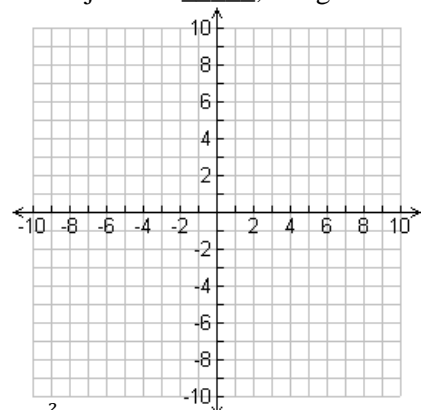

4. $\frac{(x-2)^2}{9} + \frac{(y-1)^2}{16} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____

Length of major axis:_____; Length minor axis:_____
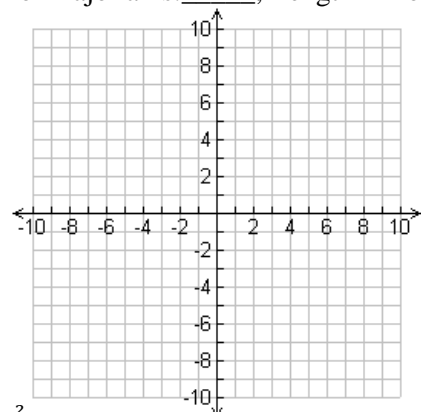

5. $\frac{(x-3)^2}{4} + \frac{y^2}{36} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____

Length of major axis:_____; Length minor axis:_____
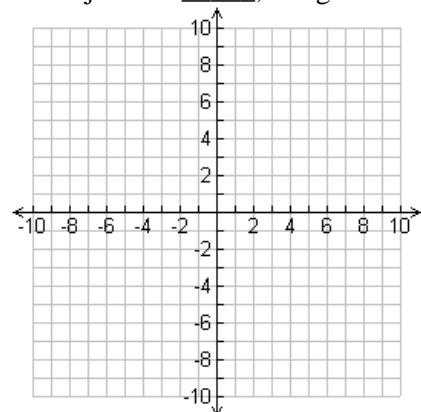

6. $\frac{x^2}{100} + \frac{y^2}{49} = 1$

Center:_____; Major axis parallel to _____

Distance left/right from center = _____

Distance up/down from center = _____

Length of major axis:_____; Length minor axis:_____

Determine whether the following equations are parabolas, circles, ellipses, or neither.

7. $x^2 - 3y = 6$

8. $-(x-1)^2 - y^2 = -25$

9. $2x - 3y = 8$

10. $x = \frac{1}{2}(y-6)^2 - 2$

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

12. $\frac{(x+4)^2}{9} + \frac{(y-1)^2}{9} = 1$
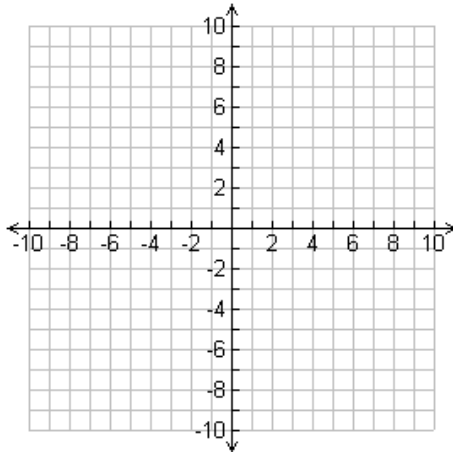
13. $2x^4 - 3y^3 - 8y + 1 = 0$

14. $\frac{(x+7)^2}{25} + \frac{y^2}{16} = 1$

Determine the center and radius of each circle. Then sketch the graph.
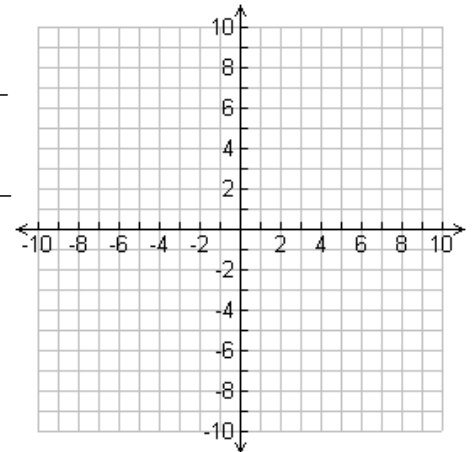
15. $(x-5)^2 + y^2 = 16$

Center = _____

Radius = _____

16. $(x+2)^2 + (y+1)^2 = 49$

Center = _____

Radius = _____
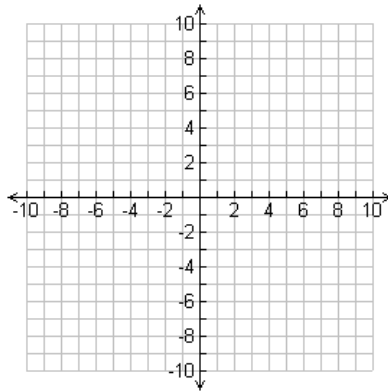

Determine the vertex and direction of opening for each parabola. Then sketch the graph.

17. $x = (y+5)^2 + 1$

Vertex = _____

Opens = _____

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

Vertex = _____

Opens = _____