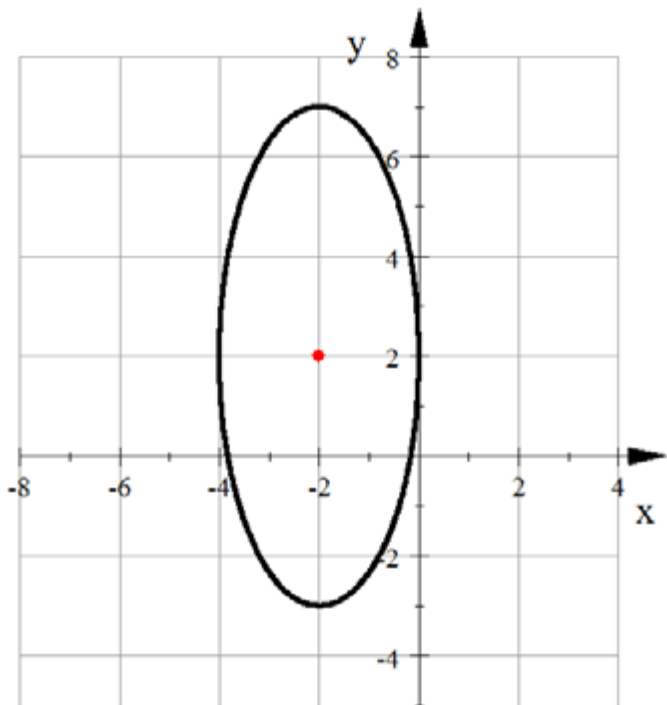


Total pts out of 20 _____

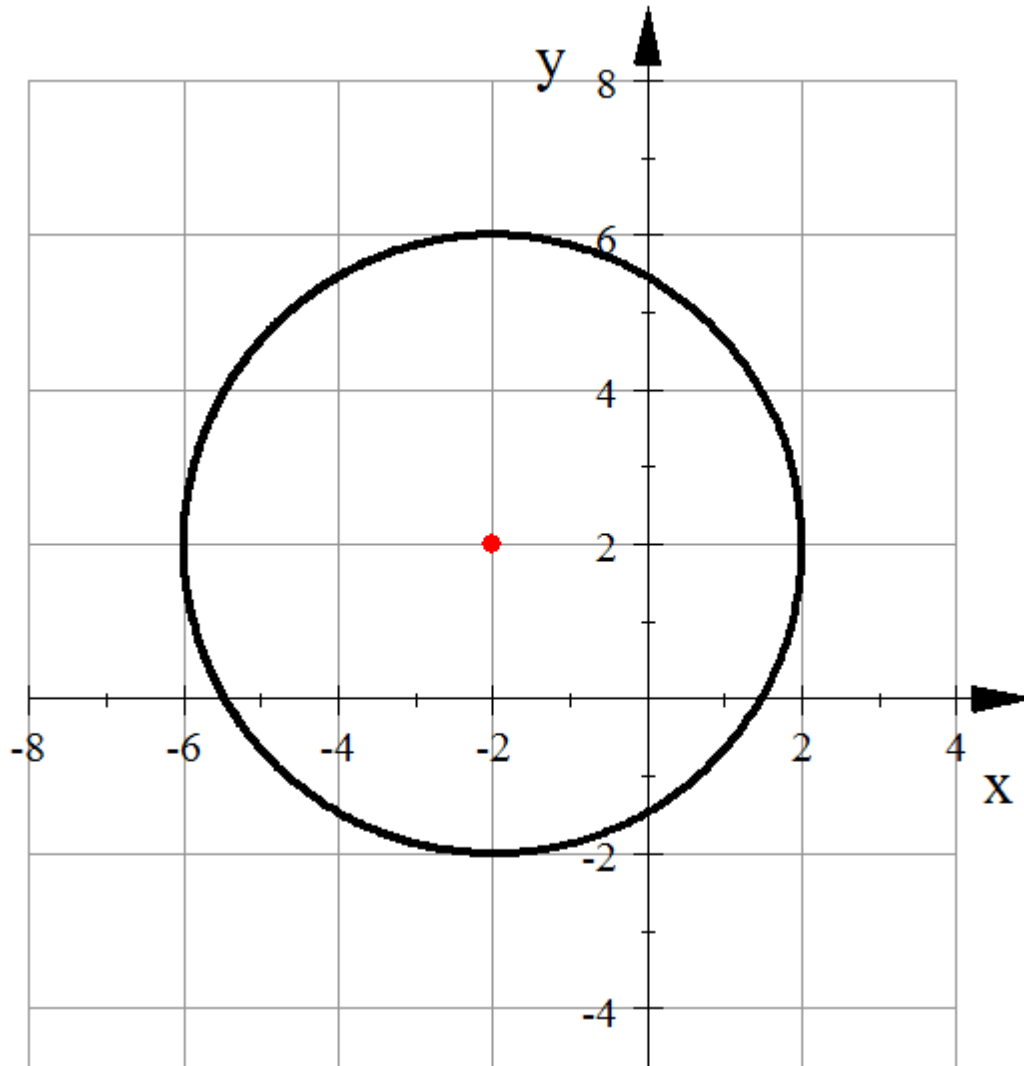
For problems 1 – 9, Identify the shape, sketch the graph, and find:

- A. find the vertex and focus if it is a parabola;
- B. find center and radius if it is a circle;
- C. find the center, a, b, and foci if it is an ellipse
- D. find the center, a, b, and foci if it is a hyperbola

1. $4x^2 - 16x - 9y^2 + 18y = 29$
 2. $4x^2 - 16x + 9y^2 + 18y = 39$
 3. $4x^2 - 16x + 4y^2 + 24y = -16$
 4. $x^2 - 4x + 1 = y$
 5. $y = 4x^2 - 8x$
 6. $y^2 + 8y + 3x = -22$
 7. $4(x - 3)^2 + (y + 1)^2 = 100$
 8. $4(x - 3)^2 - (y + 1)^2 = 100$
 9. $(x - 3)^2 + (y + 1)^2 = 100$
10. Find the equation of circle given the following information.
- a. center: $(1, -2)$, radius: 3
 - b. two end points of the diameter: $(-3, 2)$, $(3, 0)$
11. Find the equation of the given graphs.
- a.



b.



12. Find the equation of a parabola given the following information.

- a. vertex: $(1, -2)$, focus: $(1, 0)$
- b. vertex: $(3, -2)$, focus: $(5, -2)$