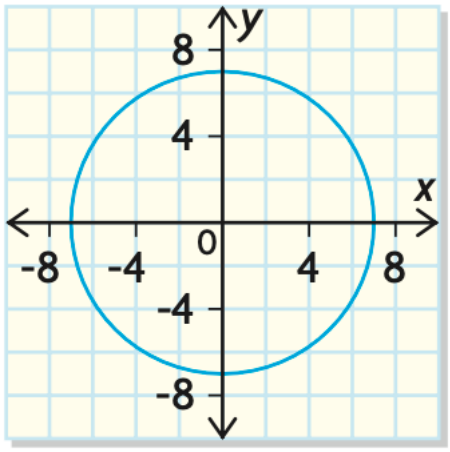
Math 10D – Unit 2: Analytic Geometry **Name:**_____

Homework 2.3 – Circles **Date:**_____

1. The graph at the right shows a circle with centre at (0,0).



a) State the x-intercepts.

b) State the y-intercepts.

c) State the radius

d) Write the equation of the circle.

2. Write the equation of a circle given the radius or point on the circle.

a) $r = 3$

b) $r = 50$

c) $P(8, -5)$

d) $Q(-11,23)$

3. Determine whether the following points or inside, on, or outside the circle $x^2 + y^2 = 65$

a) $(-4,7)$

b) $(6, -6)$

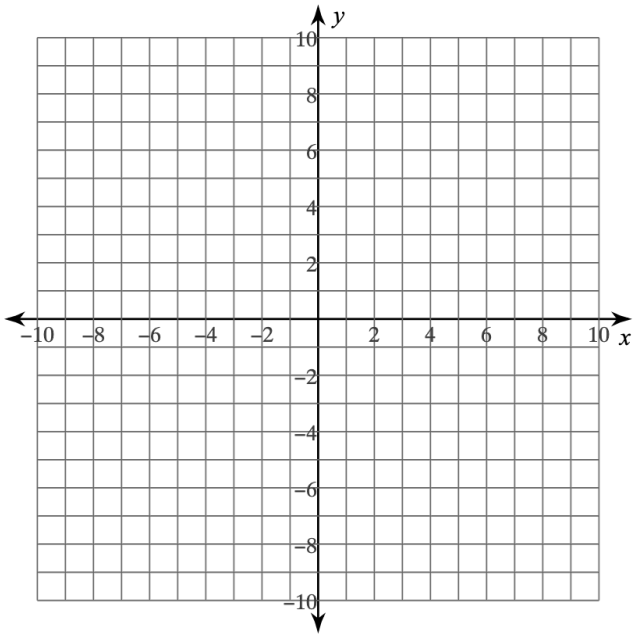
c) $(8, -1)$

d $(-3,6)$

4. Given the circle $x^2 + y^2 = 49$:

a) Determine the radius

b) State the x and y intercepts



c) Sketch the circle on the graph.

5. Points $(a, 5)$ and $(9, b)$ are on the circle $x^2 + y^2 = 125$. Determine the possible values of *a* and *b*. Round to one decimal place if necessary.

6. A satellite orbits Earth on a path with $x^2 + y^2 = 45{,}000{,}000$. Another satellite, in the same place, is currently located at $(12504, 16050)$. Explain how you would determine whether the second satellite is inside or outside the orbit of the first satellite (and is it inside or outside?). NOTE: This question is made up as objects go around Earth using an elliptical orbit, not circular.