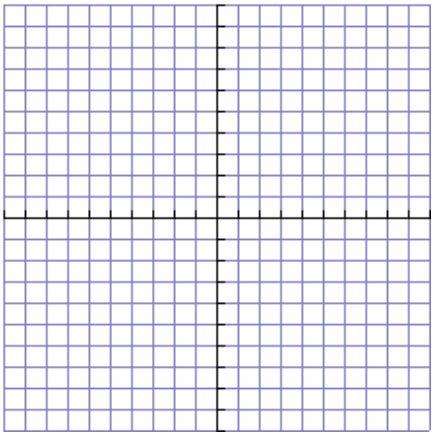
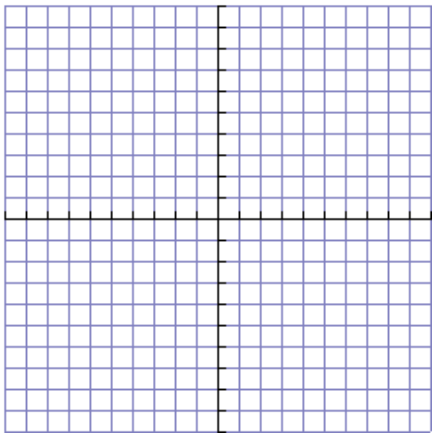
Conics Worksheet 1: Circles **Name:**_____

I. For each of the following a) give the center, b) give the radius and c) graph the circle.

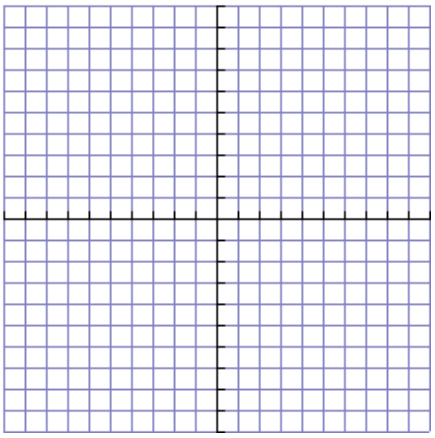
1) $(x - 3)^2 + (y - 2)^2 = 16$



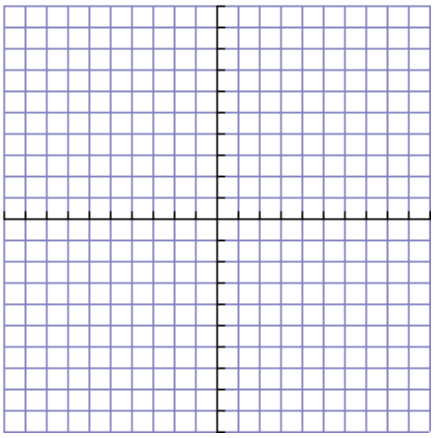
2) $x^2 + (y + 5)^2 = 25$



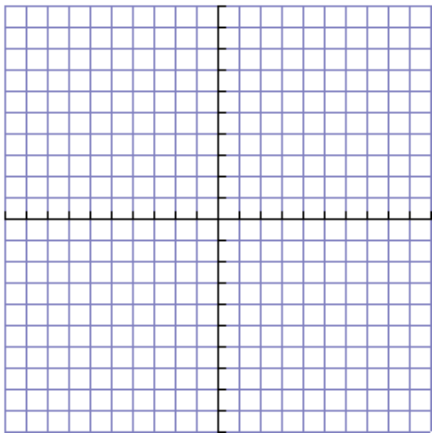
3) $(x + 1)^2 + (y - 2)^2 = 49$



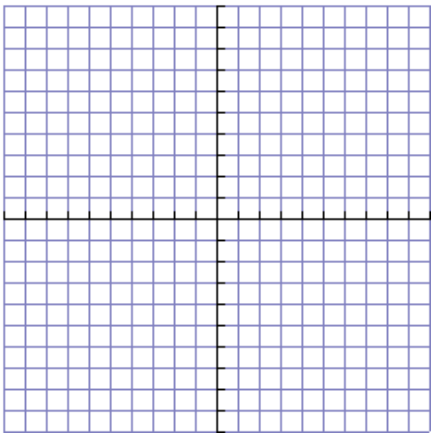
4) $x^2 + y^2 + 6x + 2y + 6 = 0$



5) $x^2 + y^2 - 6x + 10y + 34 = 0$



6) $x^2 + y^2 - 2x - 15 = 0$



II. Write the equation of the circle in graphing form.

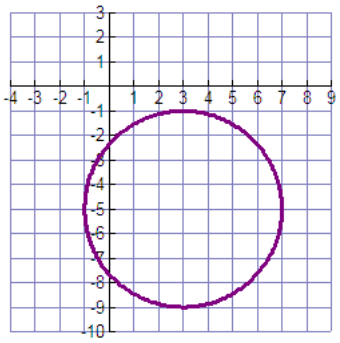
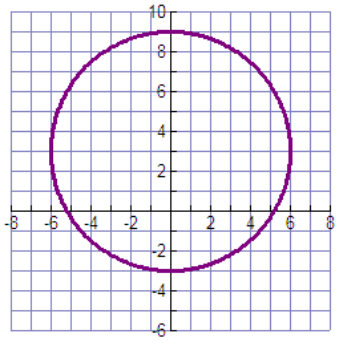
7) A circle with the center at the origin and a radius of 8 units.

8) A circle with the center at the origin and the point (3, 4) is on the circle.

9) A circle with the center at (2, -1) and a radius of $\sqrt{3}$.

10) A circle with the center at (-6, 5) and the point (3, 5) is on the circle.

11) A circle with the endpoints of the diameter at (3, 4) and (-3, -4).

12) The circle in each graph: a)  b) 

13) The circle tangent to the x-axis and the center at (9, -7).

III. Connections to Trigonometry: Answer each of the following.

14) A **unit circle** is defined as a circle with the center at the origin and a radius of one. Write the equation of a unit circle.

15) Which of the following points are on the unit circle?

a) (3, 4) b) $\left(-\frac{1}{2},-\frac{1}{2}\right)$ c) $\left(\frac{3}{5},-\frac{4}{5}\right)$ d) $\left(\frac{\sqrt{3}}{2},\frac{1}{2}\right)$

16) What is the circumference of the unit circle?