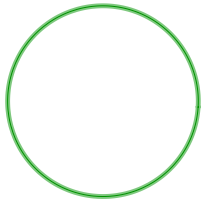
Circles

A circle is the set of all points (x, y) that are equidistant from a fixed point called the center.



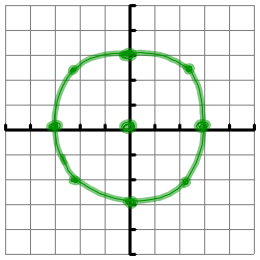
Standard Form:

$x^2 + y^2 = r^2$	center: (0, 0)	radius = r
$(x - h)^2 + (y - k)^2 = r^2$	center: (h, k)	radius = r

1. Identify the center and radius of each circle and graph.

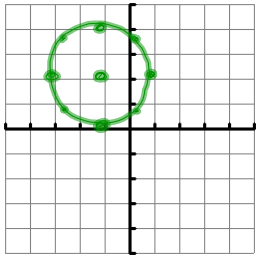
a. $x^2 + y^2 = 9$

c (0, 0)
r = 3



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

c (-1, 2)
r = 2



2. Write the equation of the circle in standard form. Identify the center and radius.

$x^2 + y^2 - 12x - 8y + 36 = 0$

$(x^2 - 12x + 36) + (y^2 - 8y + 16) = -36 + 36 + 16$

$(x - 6)^2 + (y - 4)^2 = 16$

c (6, 4)
r = 4