

Circles

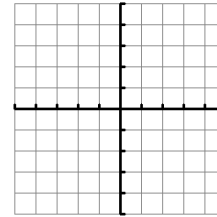
A circle is the set of all points (x, y) that are equidistant from a fixed point called the center.

Standard Form:

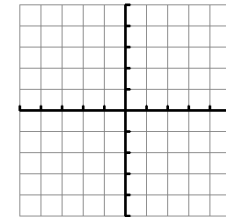
$x^2 + y^2 = r^2$	center: $(0, 0)$	radius = r
$(x - h)^2 + (y - k)^2 = r^2$	center: (h, k)	radius = r

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

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



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



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

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

b. $2x^2 + 2y^2 + 8x = -20y - 40$