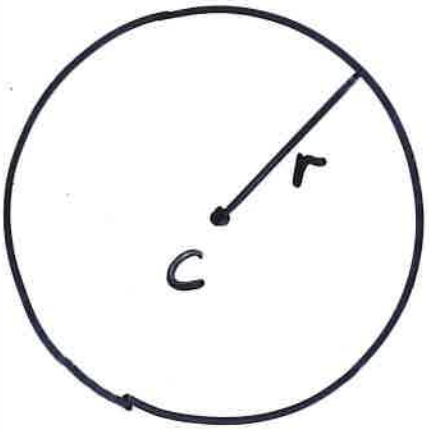
10.3 Circles



C: Center (h, k)

r: radius

Standard Form of a Circle with center (h, k) and radius r is given by

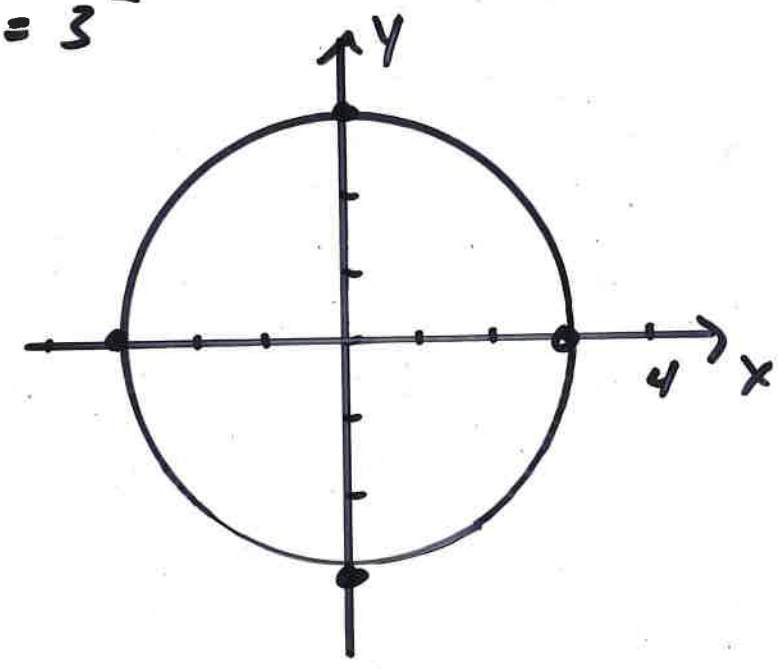
$$(x-h)^2 + (y-k)^2 = r^2$$

Ex: Graph $x^2 + y^2 = 9$

$$(x-0)^2 + (y-0)^2 = 3^2$$

Center $(0, 0)$

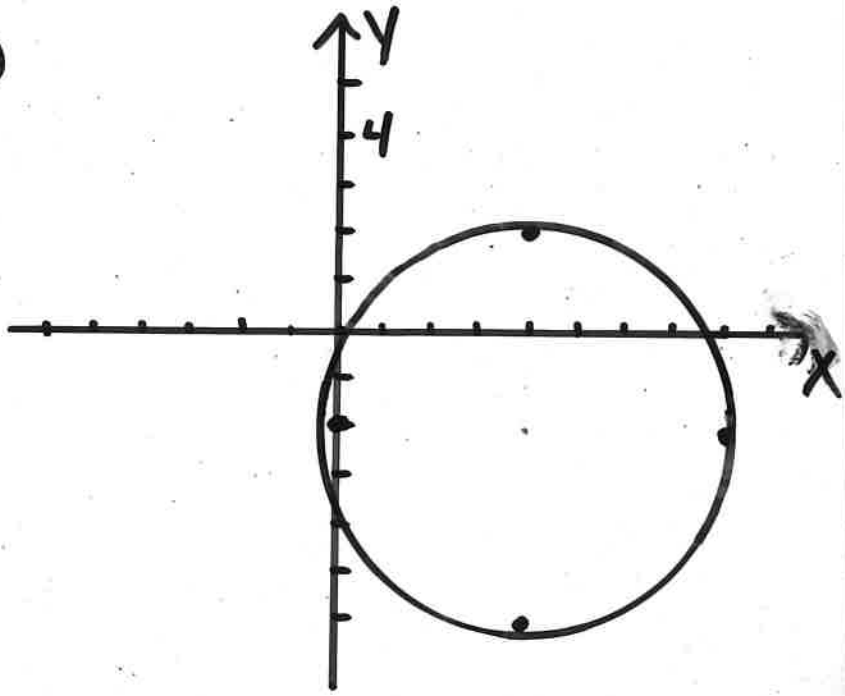
Radius $r = 3$



EX: GRAPH $(x-4)^2+(y+2)^2=16$

CENTER: $(4,-2)$

RADIUS: $r=4$



EX: GRAPH $x^2+y^2-2x+4y-4=0$

$x^2-2x \quad +y^2+4y \quad =4$

$+1 \qquad +4 \qquad +1+4$

$x^2-2x+1+y^2+4y+4=9$

$(x-1)^2+(y+2)^2=9$

CENTER: $(1,-2)$

RADIUS: 3