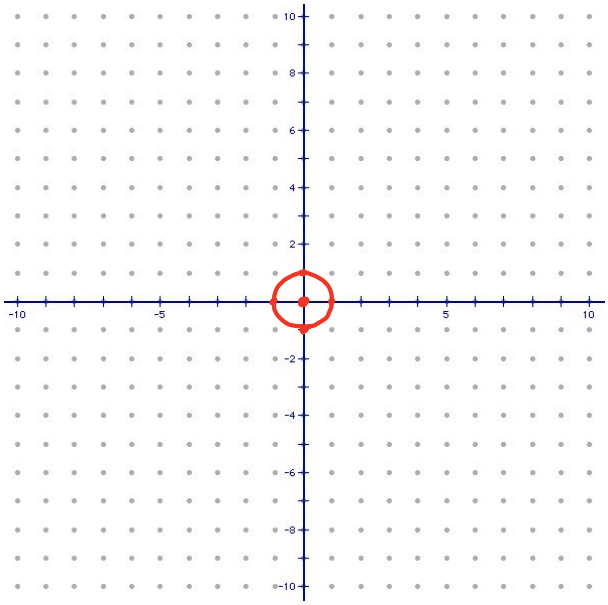
Review…Graphing Circles

Standard Form of a Circle: $(x-h)^2+(y-k)^2=r^2$, where (h, k) = center and r = radius.

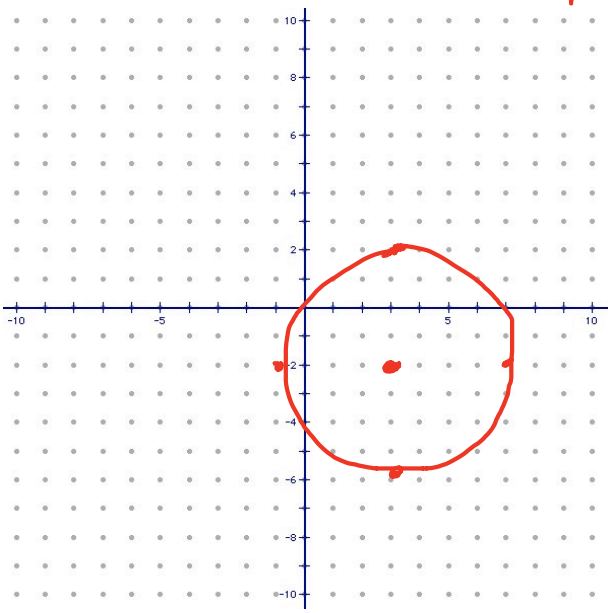
Graph $x^2+y^2=1$.

Center: (0,0)
r: 1



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

Center: (3,-2)
r = 4



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

Review…Completing the Square

Ex. Complete the square to change to standard form of a circle.

a) $x^2+y^2-4x+10y+20=0$

$(x^2-4x+4)+(y^2+10y+25)+20-4-25=0$

$(x-2)(x-2)$

$(x-2)^2+(y+5)^2-9=0$

$\boxed{(x-2)^2+(y+5)^2=9}$

b) $4x^2+4y^2-16x-24y+51=0$

$4x^2-16x+4y^2-24y$

$4(x^2-4x+4)+4(y^2-6y+9)+51-16-36=0$

$\frac{4(x-2)^2+4(y-3)^2}{4}=\frac{1}{4}$

$\boxed{(x-2)^2+(y-3)^2=\frac{1}{4}}$