

Circles and their graphs

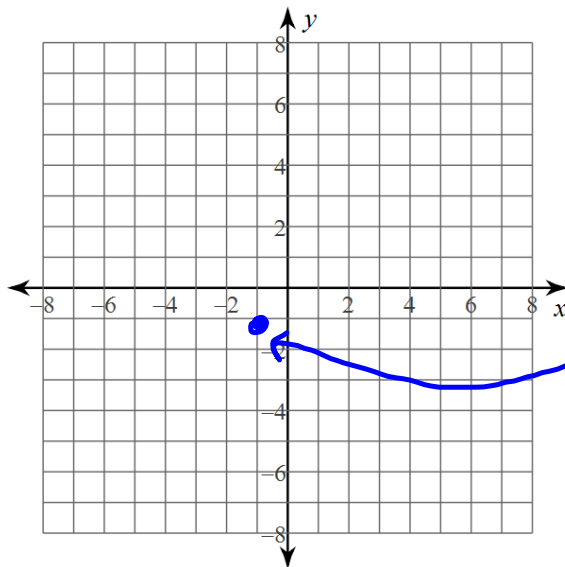
Standard form $(x - h)^2 + (y - k)^2 = r^2$

you need center and radius

center is (opposite of h, opposite of k)

Radius is r. since r is squared you will have to sq. root

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



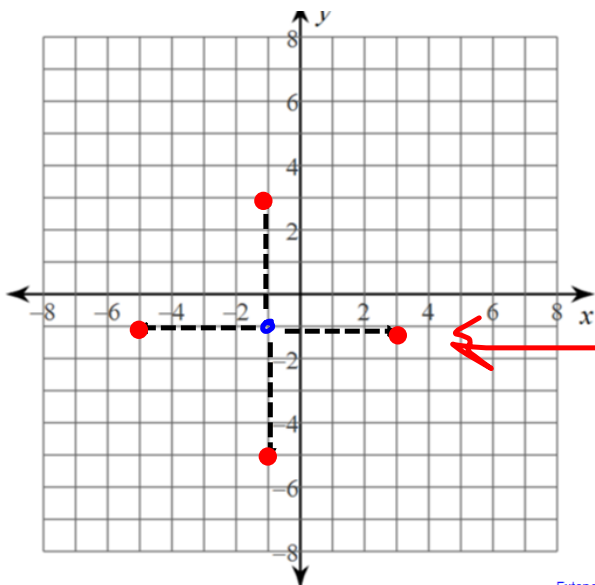
$$(x + 1)^2 + (y + 1)^2 = 16$$

center

$(-1, -1)$

Radius is square root of 16

$$R = 4$$



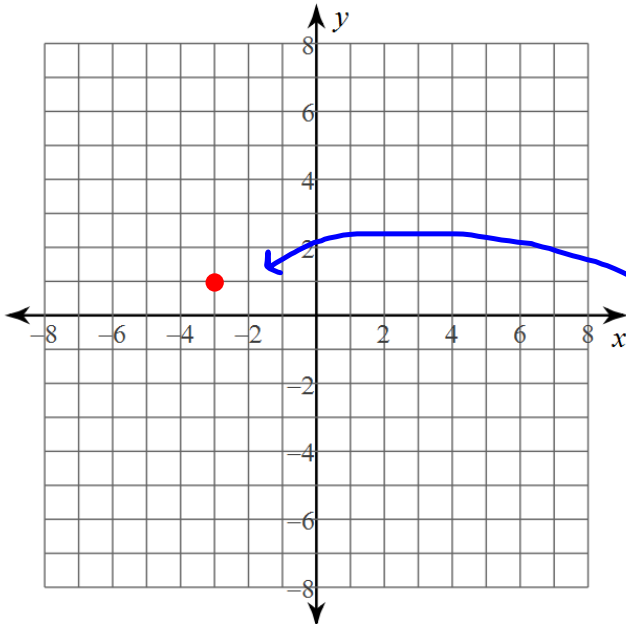
From center go up, down,
right, left 4

Connect 4 dots with arcs.

Do your best to make it
look like a circle

[Extend P](#)

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



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

center
opposite of each
 $(-3, 1)$

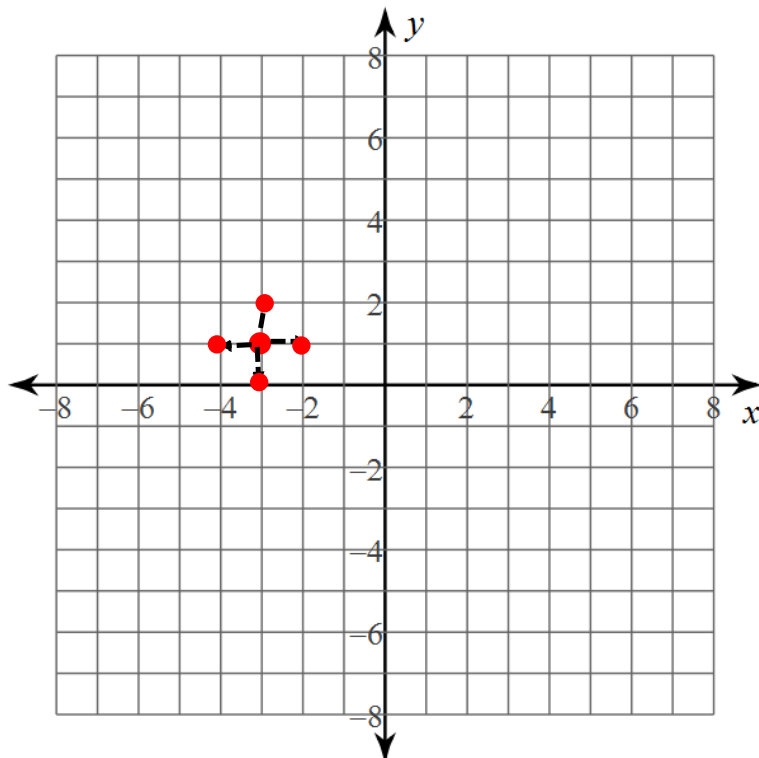
2) $(x + 3)^2 + (y - 1)^2 = 1$

Radius is root of this number

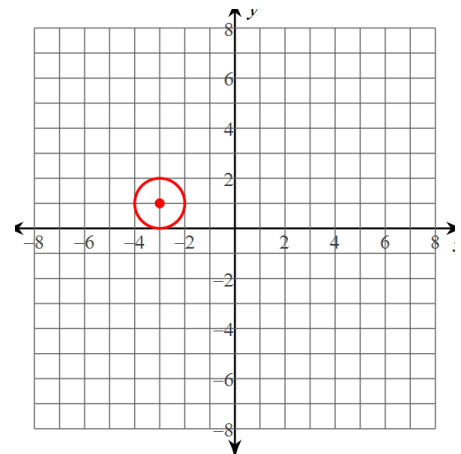
$\sqrt{1} = 1$

$R = 1$

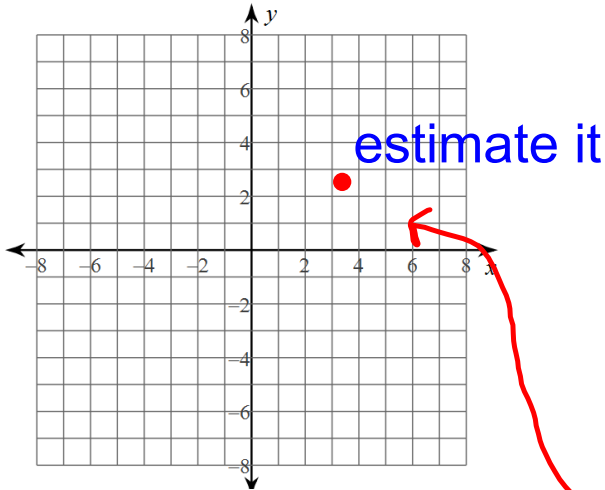
go in each direction 1



Connect all 4 with arcs



$$3) (x - \sqrt{10})^2 + \left(y - \frac{5}{2}\right)^2 = 4$$



$$(x - \sqrt{10})^2 + \left(y - \frac{5}{2}\right)^2 = 4$$

center

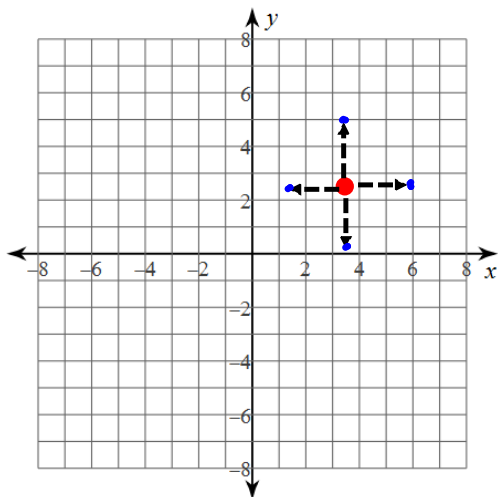
opposite of each

$$\left(+\sqrt{10}, \frac{5}{2}\right)$$

This will be messy. Make each decimal

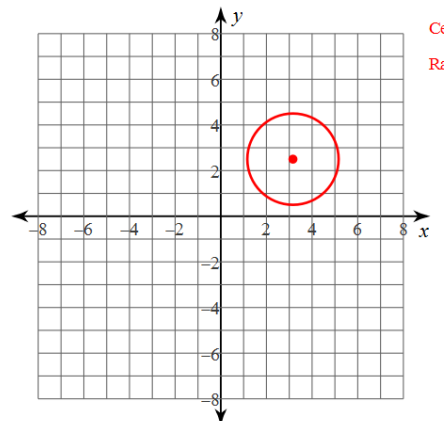
$$(3.16, 2.5)$$

$$3) (x - \sqrt{10})^2 + \left(y - \frac{5}{2}\right)^2 = 4$$

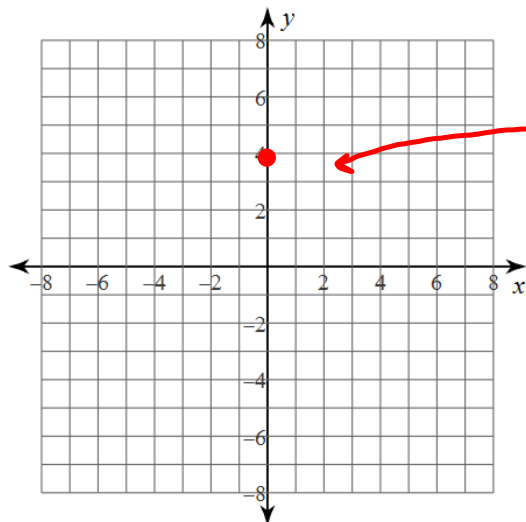


radius is root of 4

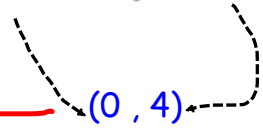
$$R = 2$$



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



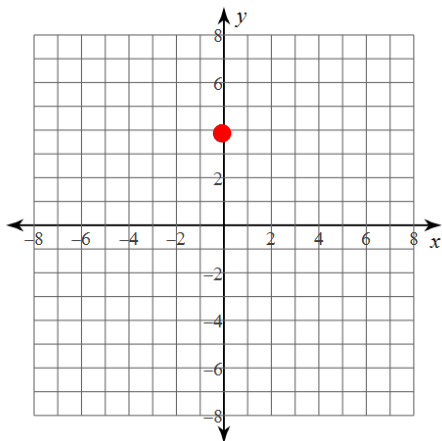
4) $x^2 + (y - 4)^2 = 2$



(0, 4)

center... If x^2 is alone.. make $x = 0$

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



Radius is square root of 2.

$\sqrt{2} = 1.41$

estimate 1.41 in each direction and make dots.

Connect with arcs, make circle

