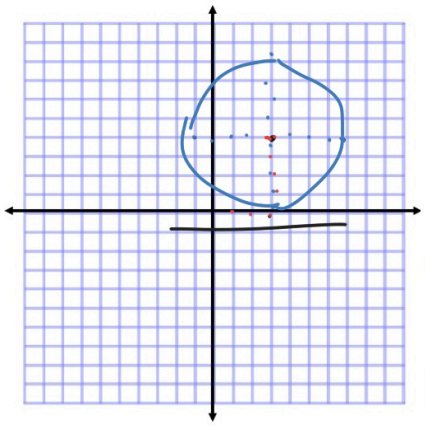
Circles!

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

(h,k) = center of circle

r = radius of circle



center: $(3,4)$

radius: 4

$$(x-3)^2+(y-4)^2=16$$

3:22

Ex 1 Find an equation of the circle with the given center and radius

$(-1,3)$; 3

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

⇩

put in opposite of h, and k

⇩

put in the square of r

3:24

Ex 2 Graph the equation

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

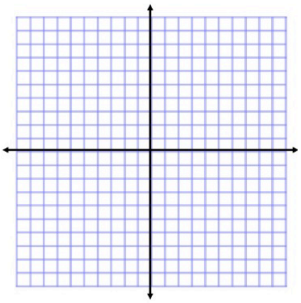
Find h, and k (take opposites)

⇩

Find r (take square root)

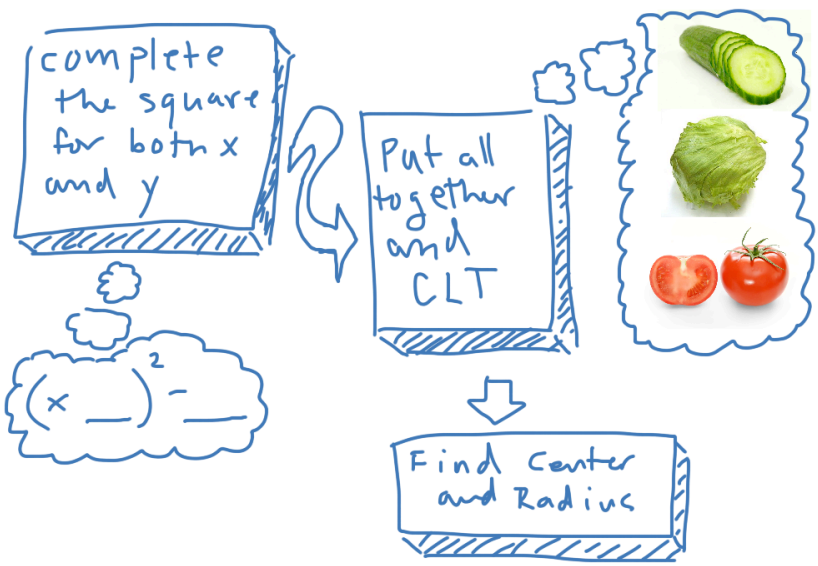
⇩

plot and connect



4:28

EX 3 Find the center and radius from the equation

(a) $x^2+y^2-81=0$

(b) $x^2+y^2+12x-6y=0$