

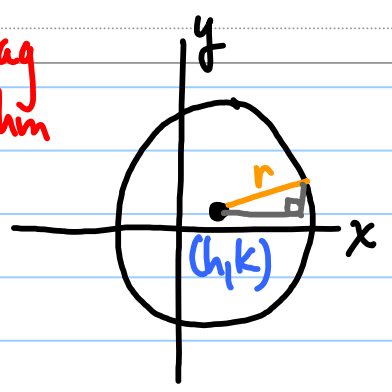
# 14.6 Equations of Circles

Thm  
14.6

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

← backwards  
center:  $(h, k)$

Pythag  
Thm



ex 1) Write the equation of a circle w/ center at  $(-4, 3)$  and a radius of 5 units.

h      k      r

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

$$(x - -4)^2 + (y - 3)^2 = 5^2$$

$$* (x+4)^2 + (y-3)^2 = 25$$

ex 2) Find the coordinates of the center & the measure of the radius of a circle whose equation is ...  $(x-6)^2 + (y+3)^2 = 18$

Your Turn #16)  $(7, 0)$ ,  $d = 2\sqrt{5} \rightarrow \sqrt{5}$

h      k      r:  $\frac{2\sqrt{5}}{2}$

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

h: 6      k: -3

$r^2 = 18$   
 $r = \sqrt{18}$   
Simplify the radical  
 $r = 3\sqrt{2}$   
 $\approx 4.24$

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

$$(x-7)^2 + y^2 = 5$$

7      0       $(\sqrt{5})^2$

#25)  $x^2 + (y-4)^2 = 7$

h: 0      k: 4      r:  $\sqrt{7}$

C: (0, 4)