

## Graphing Circles - NOTES

1) Standard Form for the Equation of a Circle:

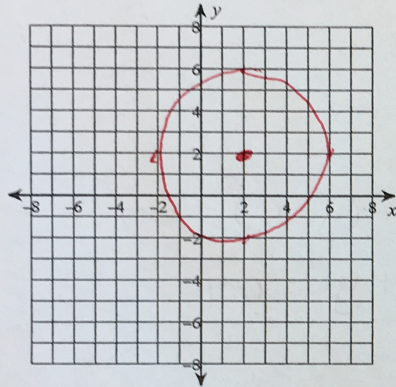
$$(x-h)^2 + (y-k)^2 = r^2$$

CENTER OF THE CIRCLE:  $(h, k)$   
 RADIUS:  $r$

Identify the center and radius of each. Then sketch the graph.

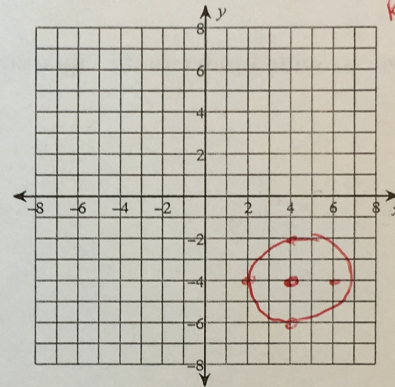
2)  $(x-2)^2 + (y-2)^2 = 16$

CENTER:  $(2, 2)$   
 RADIUS: 4



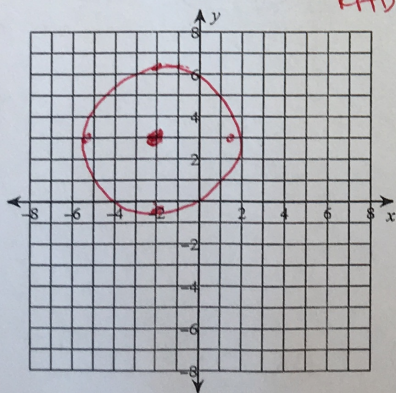
3)  $(x-4)^2 + (y+4)^2 = 4$

CENTER:  $(4, -4)$   
 RADIUS: 2



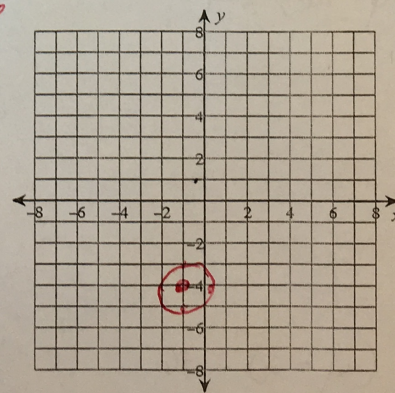
4)  $(x+2)^2 + (y-3)^2 = 10$

CENTER:  $(-2, 3)$   
 RADIUS:  $\sqrt{10} \approx 3.16$



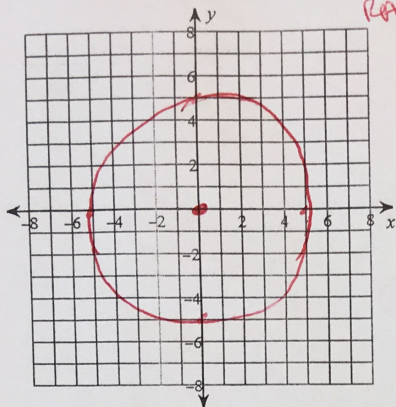
5)  $(x+1)^2 + (y+4)^2 = 1$

CENTER:  $(-1, -4)$   
 RADIUS: 1



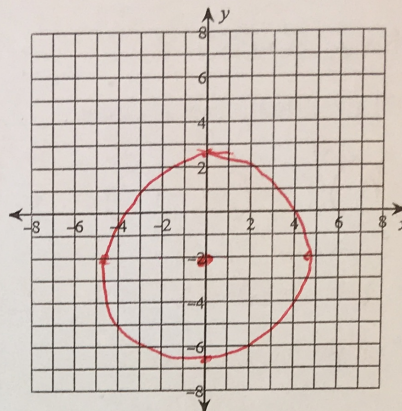
6)  $x^2 + y^2 = 25$

CENTER: (0,0)  
RADIUS: 5



7)  $x^2 + (y+2)^2 = 21$

CENTER: (0, -2)  
RADIUS:  $\sqrt{21} \approx 4.58$



Use the information provided to write the equation of each circle.

8) Center: (1, -5)  
Radius: 7

$$(x-1)^2 + (y+5)^2 = 49$$

9) Center: (-1, 0)  
Radius: 8

$$(x+1)^2 + (y-0)^2 = 64$$

$$(x+1)^2 + y^2 = 64$$

10) Center: (-3, 16)  
Radius: 2

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

11) Center: (-10, -4)  
Radius: 5

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

12) Center: (0, 3)  
Radius: 6

$$(x-0)^2 + (y-3)^2 = 36$$

$$x^2 + (y-3)^2 = 36$$

13) Center: (1, 3)  
Radius: 1

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