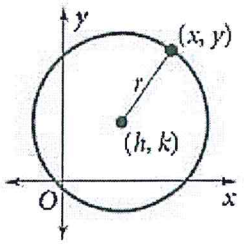
Name:_____

Equation of a Circle Notes-1

Equation of a Circle:

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

where (h, k) is the Center and r is the radius.



EXAMPLE:

1. What is the center and radius of the Circle?

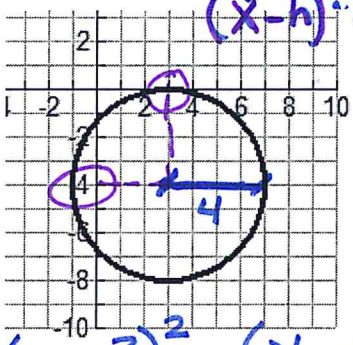
$(x-h)^2+(y-k)^2=r^2$ $\quad - - = +$

$(x-7)^2+(y+5)^2=81$

Center = $(7, -5)$

Radius = $\sqrt{81}=9$

2. Write the equation for the following circle:



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

$(h,k)\rightarrow(3,-4)$ (h k)

$r=4$

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

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

3. Write the standard equation of each circle.

a) center (3, -4) and radius 6

$(x-3)^2+(y+4)^2=36$

b) center (-2, -1) and radius $\sqrt{2}$

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

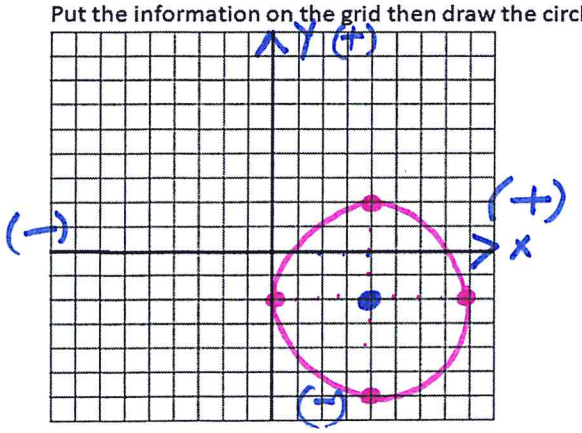
$(x+2)^2+(y+1)^2=2$ $\quad (\sqrt{2})^2$

Graph the given circle.

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

1. Find the center $(4, -2)$
2. Find the radius $r=4$

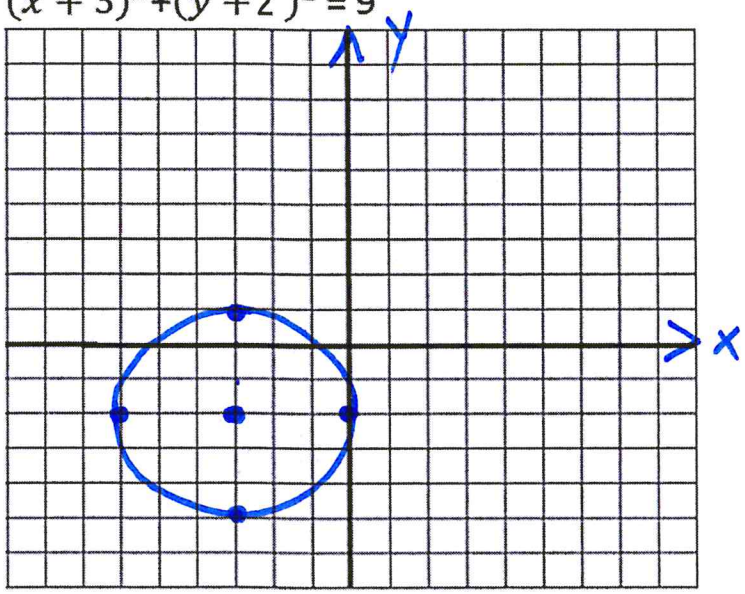
Put the information on the grid then draw the circle.



Name:_____

Graph the given circle:

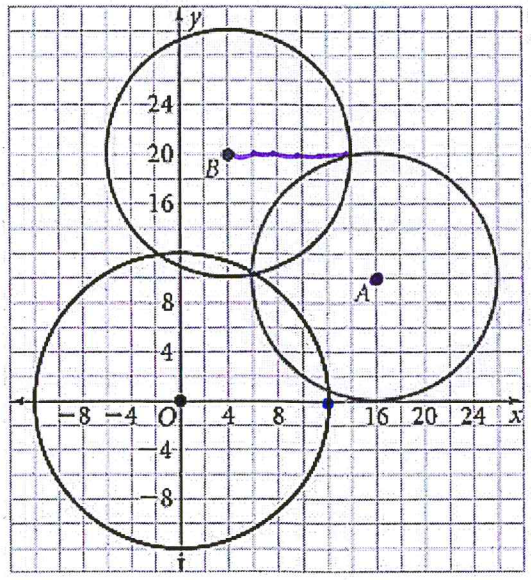
$(x+3)^2+(y+2)^2=9$



$(-3, -2)$

$r = 3$

Write an equation for each circle below.



CIRCLE A: $(4, 20)$ $r = 10$

$(x-4)^2+(y-20)^2=100$.

CIRCLE B: $(16, 10)$ $r = 10$

$(x-16)^2+(y-10)^2=100$

CIRCLE C: $(0, 0)$ $r = 12$

$x^2+y^2=144$