

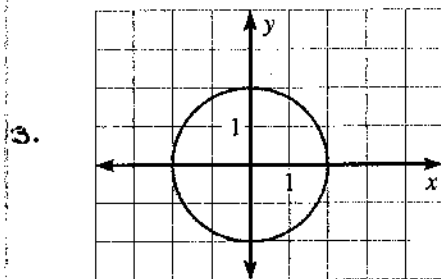
Geometry Ch 10-7 Exer, pg 692 #1, 3-14, 17-25

1. The standard equation of a circle can be written for any circle with known radius and center:

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

center (h, k) radius, r

Write the standard equation of the circle.

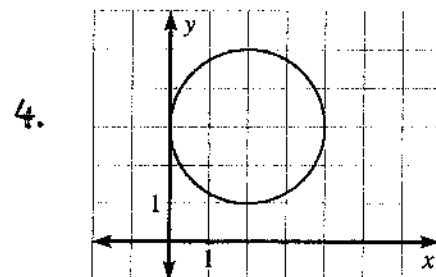


Center = $(0, 0)$

Radius = 2

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

$$\boxed{x^2 + y^2 = 4}$$

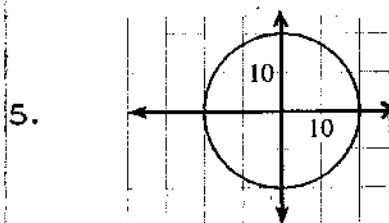


Center = $(2, 3)$

Radius = 2

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

$$\boxed{(x-2)^2 + (y-3)^2 = 4}$$

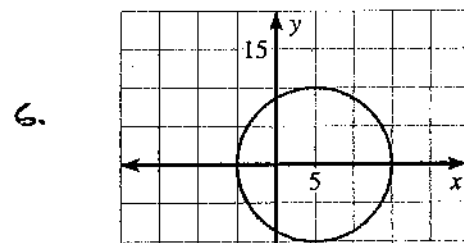


Center = $(0, 0)$

Radius = 10

$$(x-0)^2 + (y-0)^2 = 10^2$$

$$\boxed{x^2 + y^2 = 100}$$



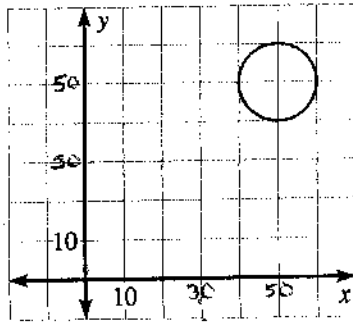
Center = $(5, 0)$

Radius = 5

$$(x-5)^2 + (y-0)^2 = 5^2$$

$$\boxed{(x-5)^2 + y^2 = 25}$$

7.



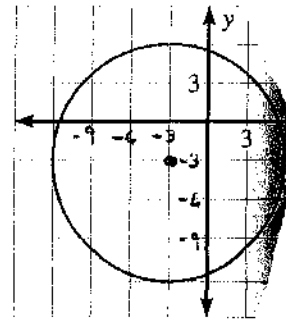
$$\text{Center} = (50, 50)$$

$$\text{Radius} = 10$$

$$(x-50)^2 + (y-50)^2 = 10^2$$

$$(x-50)^2 + (y-50)^2 = 100$$

8.



$$\text{Center} = (-3, -3)$$

$$\text{Radius} = 9$$

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

$$(x+3)^2 + (y+3)^2 = 81$$

Write the standard equation of the circle with the given center and radius.

9. Center $(0, 0)$; Radius 7

$$(x-0)^2 + (y-0)^2 = 7^2$$

$$x^2 + y^2 = 49$$

10. Center $(-4, 1)$; Radius 1

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

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

11. Center $(7, -6)$; Radius 8

$$(x-7)^2 + (y-(-6))^2 = 8^2$$

$$(x-7)^2 + (y+6)^2 = 64$$

12. Center $(4, 1)$; Radius 5

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

$$(x-4)^2 + (y-1)^2 = 25$$

13. Center $(3, -5)$; Radius 7

$$(x-3)^2 + (y-(-5))^2 = 7^2$$

$$(x-3)^2 + (y+5)^2 = 49$$

14. Center $(-3, 4)$; Radius 5

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

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

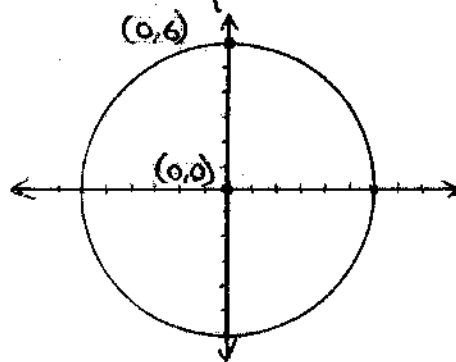
Use the info given to write the standard equation of the circle.

17. Center is $(0,0)$, a point on the circle is $(0,6)$

radius is 6

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

$$\boxed{x^2 + y^2 = 36}$$

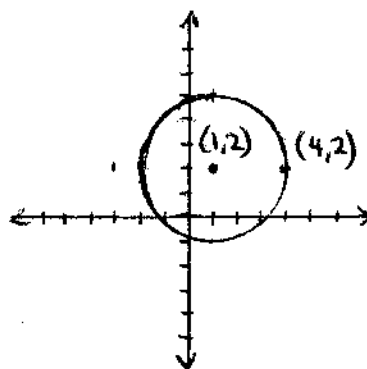


18. Center is $(1,2)$, a point on the circle is $(4,2)$

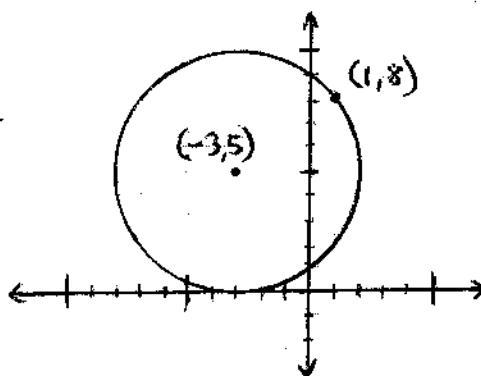
radius is 3

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

$$\boxed{(x-1)^2 + (y-2)^2 = 9}$$



19. Center is $(-3,5)$, a point on the circle is $(1,8)$



Use Pyth Thm for radius:

$$\text{radius} = \sqrt{(-3-1)^2 + (5-8)^2} = \sqrt{16+9} = \sqrt{25}$$

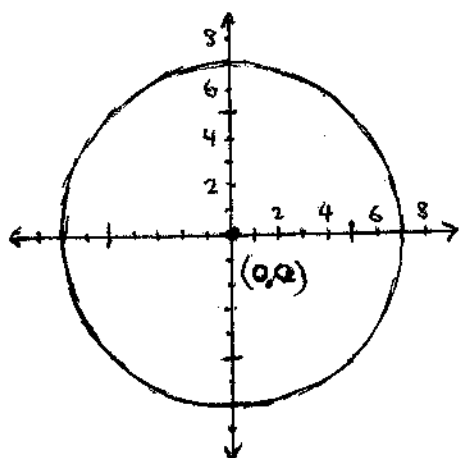
$$\text{radius} = 5$$

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

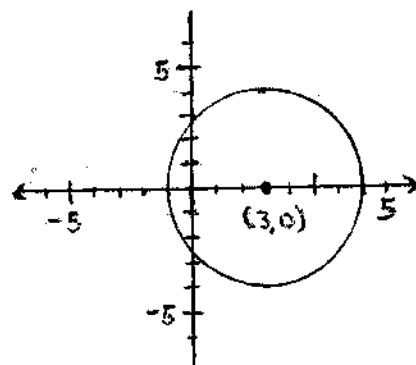
$$\boxed{(x+3)^2 + (y-5)^2 = 25}$$

Graph the equation.

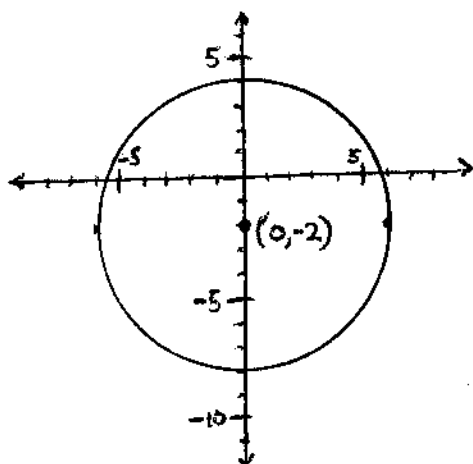
20. $x^2 + y^2 = 49$
center $(0,0)$, radius 7



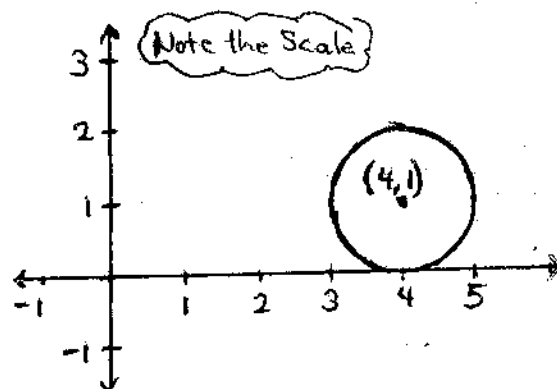
21. $(x-3)^2 + y^2 = 16$
center $(3,0)$, radius 4



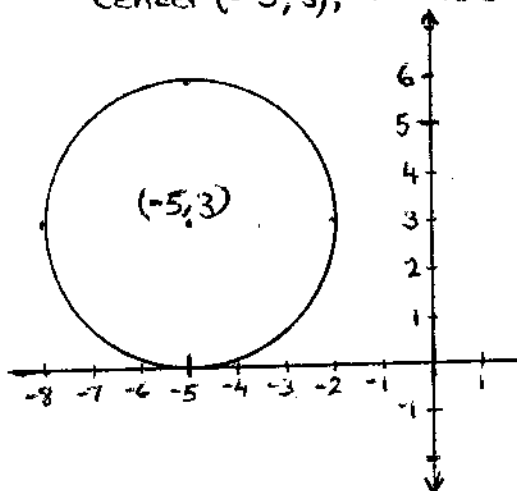
22. $x^2 + (y+2)^2 = 36$
center $(0,-2)$, radius 6



23. $(x-4)^2 + (y-1)^2 = 1$
center $(4,1)$, radius 1



24. $(x+5)^2 + (y-3)^2 = 9$
center $(-5,3)$, radius 3



25. $(x+2)^2 + (y+6)^2 = 25$
center $(-2,-6)$, radius 5

