

Write the standard form of the equation of each circle shown or described.

(3, -13)

7.) Center: (2, -5) Point on Circle: (-7, -1)

$$(x-2)^2 + (y+5)^2 = 97$$

8.) Diameter with Endpoints: (-3, 11) and (3, -13)

$$x^2 + (y+1)^2 = 153$$

9.) Center (3, 5) passes through (-1, -2)

$$(x-3)^2 + (y-5)^2 = 65$$

10.) Center (3, 6) passes through (-1, 4)

$$(x-3)^2 + (y-6)^2 = 20$$

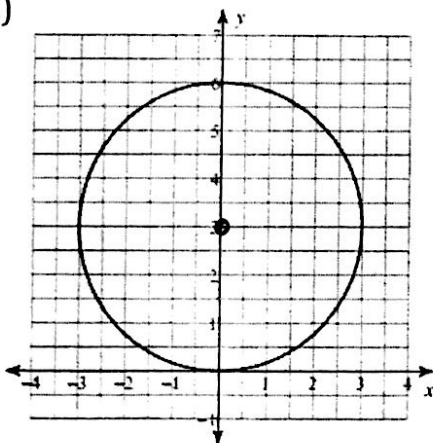
11.) Endpoints of Diameter: (3, 6) and (-1, 4)

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

12.) Endpoints of diameter: $(\frac{1}{2}, 4)$ and $(\frac{3}{2}, -1)$

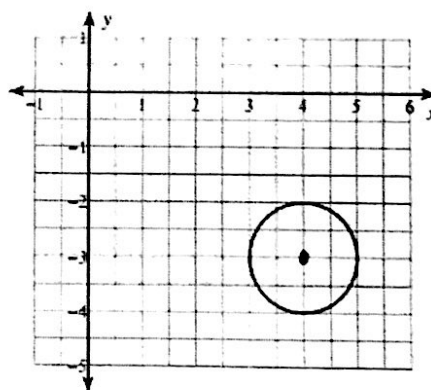
$$(x-1)^2 + (y-\frac{3}{2})^2 = \frac{13}{2}$$

13.)



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

14.)



$$(x-4)^2 + (y+3)^2 = 1$$

Complete the square to write each equation in standard form. Identify the center and radius for each circle.

1.) $8x + x^2 - 2y = 64 - y^2$

$$(x+4)^2 + (y-1)^2 = 81$$

Center: $(-4, 1)$

radius: 9

2.) $137 + 6y = -y^2 - x^2 - 24x$

$$(x+12)^2 + (y+3)^2 = 16$$

Center: $(-12, -3)$

radius: 4

3.) $y^2 + 2x + x^2 = 24y - 120$

$$(x+1)^2 + (y-12)^2 = 25$$

Center: $(-1, 12)$

radius: 5

4.) $8x + 32y + y^2 = -263 - x^2$

$$(x+4)^2 + (y+16)^2 = 9$$

Center: $(-4, -16)$

radius: 3

5.) $x^2 + y^2 + 14x - 8y + 29 = 0$

$$(x+7)^2 + (y-4)^2 = 36$$

Center: $(-7, 4)$

radius: 6

6.) $4y + y^2 = -28x - x^2 - 191$

$$(x+14)^2 + (y+2)^2 = 9$$

Center: $(-14, -2)$

radius: 3