

Equations of Circles

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

- 1) Center: (-12, 8)
Radius: 3

$$(x+12)^2 + (y-8)^2 = 9$$

- 2) Center: $(-12, \frac{1}{2})$
Radius: $\sqrt{11}$

$$(x+12)^2 + (y-\frac{1}{2})^2 = 11$$

- 3) Center: (4, -15)
Radius: 3

$$(x-4)^2 + (y+15)^2 = 9$$

- 4) Center: $(-11, \sqrt{170})$
Radius: $\sqrt{10}$

$$(x+11)^2 + (y-\sqrt{170})^2 = 10$$

- 5) Center: (-7, 14)
Area: 25π $r^2 = 25$

$$(x+7)^2 + (y-14)^2 = 25$$

- 6) Center: (14, 15)
Area: 9π $r^2 = 9$

$$(x-14)^2 + (y-15)^2 = 9$$

- 7) Center: (-2, -12)
Circumference: 6π $r=3$

$$(x+2)^2 + (y+12)^2 = 9$$

- 8) Center: (-12, 15)
Circumference: 6π $r=3$

$$(x+12)^2 + (y-15)^2 = 9$$

- 9) Center: (3, 12)
Point on Circle: (4, 10)

$$(4-3)^2 + (10-12)^2 = r^2$$

$$1^2 + (-2)^2 = r^2$$

$$5 = r^2 \quad \boxed{(x-3)^2 + (y-12)^2 = 5}$$

- 10) Center: (-13, -4)
Point on Circle: (-15, -3)

$$(-15+13)^2 + (-3+4)^2 = r^2$$

$$(-2)^2 + (1)^2 = r^2$$

$$5 = r^2$$

$$(x+13)^2 + (y+4)^2 = 5$$

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

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

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

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

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

3) $x^2 + y^2 + 14x - 12y + 4 = 0$

$$(x+7)^2 + (y-6)^2 = 81$$

4) $y^2 + 2x + x^2 = 24y - 120$

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

5) $x^2 + 2x + y^2 = 55 + 10y$

$$(x+1)^2 + (y-5)^2 = 81$$

6) $8x + 32y + y^2 = -263 - x^2$

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