

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

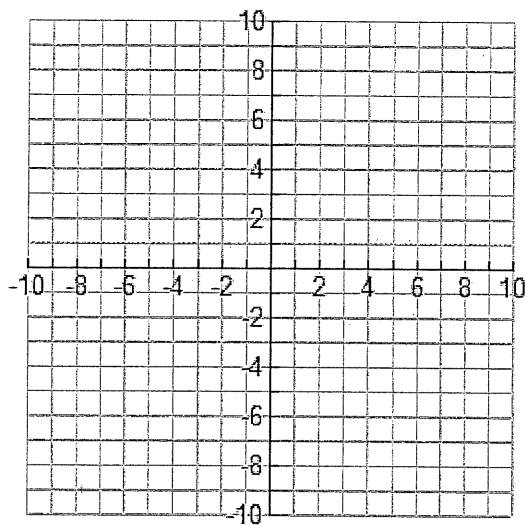
Midpoint: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

1. Given the circle: $x^2 + (y + 3)^2 = 36$

a. Identify the center: _____

b. Identify the radius: _____

c. Graph the circle.



2. Given the circle whose center is the origin and goes through the point $(-2, 7)$

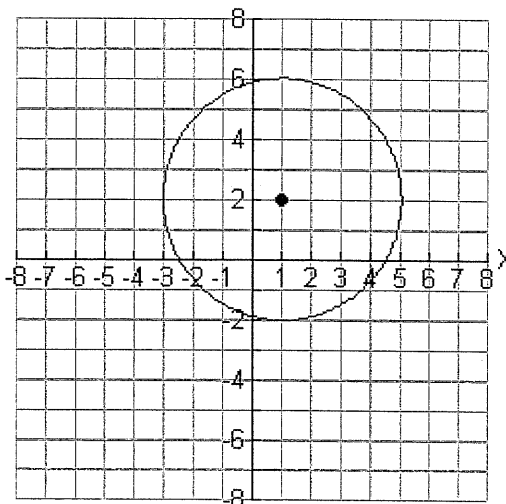
Write the equation of the circle in standard form: _____

3. Given the following graph of the circle:

Identify the center: _____

Identify the radius: _____

Write the equation in standard form:



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

Midpoint: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

4. Given the equation below:

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

A. Write this equation in standard form: _____

B. Identify the center and radius of the circle. Center: _____ Radius: _____.

5. Given the circle with a center at (1, -7) and a radius of 15.

Write the equation of the circle in standard form: _____

6. The circle passes through the point (5, 6) and has its center at (2, 3).

Write the equation of the circle in standard form: _____

7. The endpoints of a diameter are at (2, 3) and at (-6, -5).

Write the equation of the circle in standard form: _____

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

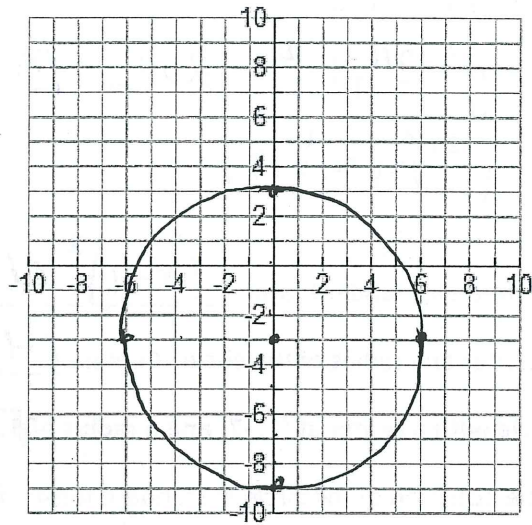
Midpoint: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

1. Given the circle: $x^2 + (y + 3)^2 = 36$

a. Identify the center: $(0, -3)$

b. Identify the radius: $r = 6$

c. Graph the circle.



2. Given the circle whose center is the origin and goes through the point $(-2, 7)$

Write the equation of the circle in standard form: $(x - 0)^2 + (y - 0)^2 = 53$

* Find r^2 first.

$$r^2 = (0 - (-2))^2 + (0 - 7)^2$$

$$r^2 = 2^2 + 7^2$$

$$r^2 = 4 + 49$$

$$r^2 = 53$$

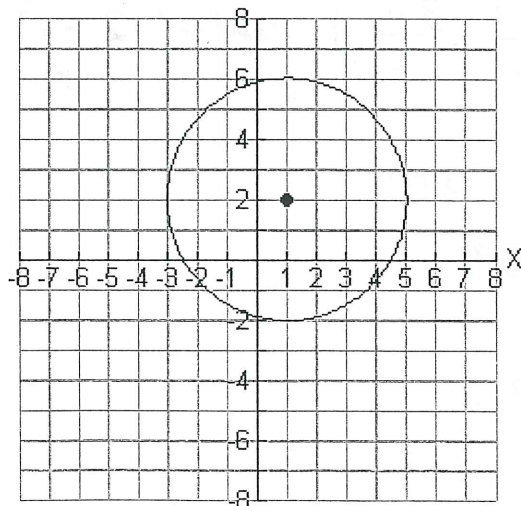
3. Given the following graph of the circle:

Identify the center: $(1, 2)$

Identify the radius: $r = 4$

Write the equation in standard form:

$(x - 1)^2 + (y - 2)^2 = 16$



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

Midpoint: $(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$

4. Given the equation below:

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

$$x^2 + 2x + \underline{1} + y^2 - 24y + \underline{144} = -120 + \underline{1} + \underline{144}$$

$$(\frac{2}{2})^2 = (1)^2 = 1 \quad (\frac{-24}{2})^2 = (-12)^2 = 144$$

$$(x \quad)^2 + (y \quad)^2 = 25$$

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

A. Write this equation in standard form: $(x+1)^2 + (y-12)^2 = 25$

B. Identify the center and radius of the circle. Center: $(-1, 12)$ Radius: 5

5. Given the circle with a center at $(1, -7)$ and a radius of $\sqrt{15}$.

Write the equation of the circle in standard form: $(x-1)^2 + (y+7)^2 = 15$

6. The circle passes through the point $(5, 6)$ and has its center at $(2, 3)$.

Write the equation of the circle in standard form: $(x-2)^2 + (y-3)^2 = 18$

* find r^2

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

$$r^2 = (5-2)^2 + (6-3)^2$$

$$r^2 = 3^2 + 3^2 = 18$$

$$(x-2)^2 + (y-3)^2 = 18$$

7. The endpoints of a diameter are at $(2, 3)$ and at $(-6, -5)$. * use midpt. to find center * use circle equation to find radius

Write the equation of the circle in standard form: $(x+2)^2 + (y+1)^2 = 32$

Midpt. $(\frac{2-6}{2}, \frac{3-5}{2})$ center $(-2, -1)$

$$r^2 = (2+2)^2 + (3+1)^2$$

$$r^2 = 4^2 + 4^2$$

$$r^2 = 16 + 16$$

$$r^2 = 32$$