

Name: _____ Per: _____ Date: _____

Coordinate Plane Review #2

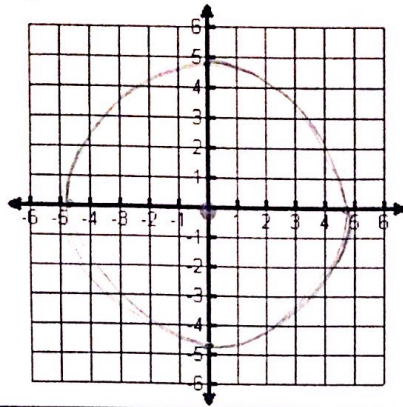
Graph the following circles. State the center and radius.

1. $x^2 + y^2 = 24$

$r = \sqrt{24}$
 $\begin{matrix} 6 & 4 \\ 2 & 3 \end{matrix}$

Center: $(0, 0)$

Radius: $2\sqrt{6}$

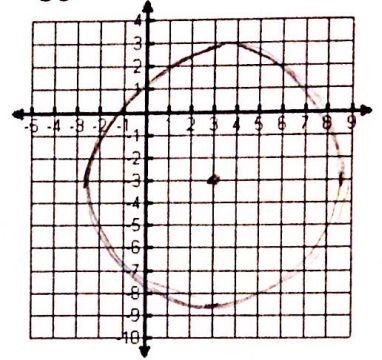


2. $(x-2)^2 + (y+3)^2 = 30$

$\sqrt{30}$
 $\begin{matrix} 5 & 5 \\ 2 & 3 \end{matrix}$

Center: $(2, -3)$

Radius: $\sqrt{30}$



Write the standard equation for the circle.

3. $x^2 + y^2 - 10x - 2y = -10$

$(x^2 - 10x + 25) + (y^2 - 2y + 1) = -10$
 $(x-5)^2 + (y-1)^2 = 16$

Center: $(5, 1)$ and $r = 4$

Write the general form for circle.

4. $(x-2)^2 + (y+1)^2 = 9$

$x^2 - 4x + 4 + y^2 + 2y + 1 = 9$
 $x^2 + y^2 - 4x + 2y + 4 + 1 = 9$
 $x^2 + y^2 - 4x + 2y = 4$

5. A circular disk drive has a diameter with endpoints at $(-9, 2)$ and $(15, 12)$. Find the center and radius of the disk drive. Write the equation of the circle in standard form.

Center: $(3, 7)$

$r = 13$

Equation: $(x-3)^2 + (y-7)^2 = 169$

$D = \sqrt{(15-(-9))^2 + (12-2)^2}$

$24^2 + 100$

$\sqrt{676}$

$(2b)$

$\frac{-9+15}{2} = \frac{6}{2} = 3$

$\frac{2+12}{2} = \frac{14}{2} = 7$

Find the intersection of the two equations:

6. Algebraically: $x^2 + y^2 = 34$
 $y = x + 2$

Intersection(s): $(3, 5), (-5, -3)$

$x^2 + (x+2)^2 = 34$

$x^2 + x^2 + 4x + 4 = 34$

$2x^2 + 4x + 4 = 34$

$x^2 + 2x + 2 = 17$

$x^2 + 2x - 15 = 0$

$(x-3)(x+5) = 0$

$x = 3 \quad x = -5$

7. Graphically: $(x-4)^2 + (y+1)^2 = 16$

$y = x - 1$

Intersection(s): $(4, 3), (0, -1)$

