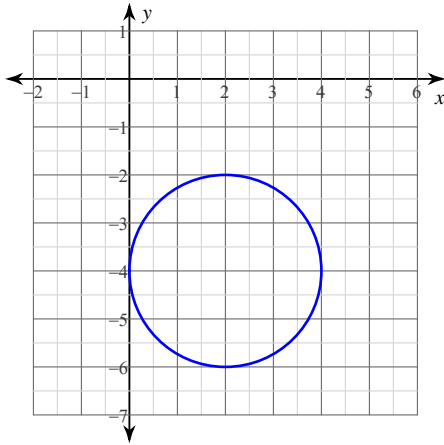


Use the information provided to write the standard form equation of each circle.

1)

2) Ends of a diameter: $(12, -13)$ and $(12, -9)$ 3) Center: $(-16, -12)$ Area: 7π

Identify the center, vertices, and foci of each. Then sketch the graph.

4)
$$\frac{(x-4)^2}{4} + \frac{(y-1)^2}{25} = 1$$

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

5) Vertices: $(3, -3)$, $(3, -13)$ Foci: $(3, -5)$, $(3, -11)$ 6) Endpoints of major axis: $(17, -3)$, $(3, -3)$ Endpoints of minor axis: $(10, 3)$, $(10, -9)$

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

7) Vertices: $(9, 9)$, $(3, 9)$ Foci: $(11, 9)$, $(1, 9)$ 8) Vertices: $(-2, 5)$, $(-8, 5)$

Distance from Center to Focus = 5

Use the information provided to write the vertex form equation of each parabola.

9) Vertex: $(5, 9)$, Focus: $(5, \frac{37}{4})$

10) Focus: $(-10, 3)$, Directrix: $x = -8$

Identify the vertices, foci, and asymptotes of each. Then sketch the graph.

11)
$$(x+3)^2 - \frac{(y-2)^2}{4} = 1$$

Identify the vertex, focus, axis of symmetry, and directrix of each. Then sketch the graph.

12)
$$-y^2 + 4x + 2y - 13 = 0$$

Classify each conic section and write its equation in standard form.

13)
$$x^2 - 4y^2 + 6x - 8y + 1 = 0$$

14)
$$49x^2 + 9y^2 + 392x + 343 = 0$$

15)
$$x^2 + y^2 + 4x - 2y - 18 = 0$$