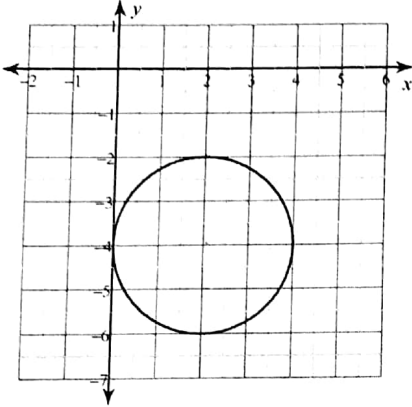


Use the information provided to write the standard form equation of each circle.

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



2) Ends of a diameter: (12, -13) and (12, -9)

$(x-12)^2 + (y+11)^2 = 4$

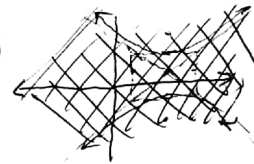
3) Center: (-16, -12)

Area: 7π $(x+16)^2 + (y+12)^2 = 7$

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

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

Center: (4, 1) F: (4, 1 + $\sqrt{21}$) (4, 1 - $\sqrt{21}$)
 V: (4, 6) (4, -4)
 CV: (6, 1) (2, 1)



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

5) Vertices: (3, -3), (3, -13) $\frac{(x-3)^2}{9/16} + \frac{(y+8)^2}{25} = 1$
 Foci: (3, -5), (3, -11)

6) Endpoints of major axis: (17, -3), (3, -3) $\frac{(x-10)^2}{49} + \frac{(y+3)^2}{36} = 1$
 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) $\frac{(x-6)^2}{9} - \frac{(y-9)^2}{16} = 1$
 Foci: (11, 9), (1, 9)

8) Vertices: (-2, 5), (-8, 5) $\frac{(x+5)^2}{9} - \frac{(y-5)^2}{16} = 1$
 Distance from Center to Focus = 5

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

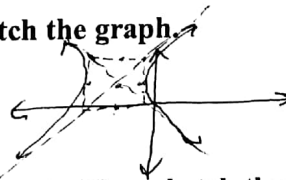
9) Vertex: (5, 9), Focus: $(5, \frac{37}{4})$ $(x-5)^2 = 1(y-9)$

10) Focus: (-10, 3), Directrix: $x = -8$
 $(y-3)^2 = -4(x+9)$

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

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

V: (-2, 2) (4, 2) C: (-3, 2)
 F: (-3 + $\sqrt{5}$, 2) a: 1
 Asy: (-3 - $\sqrt{5}$, 2) b: 2
 c: $\sqrt{5}$



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

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

$-1(y^2 + 2y + 1) = -4x + 12$

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

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

13) $x^2 - 4y^2 + 6x - 8y + 1 = 0$ $\frac{(x+3)^2}{4} - \frac{(y+1)^2}{1} = 1$

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

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