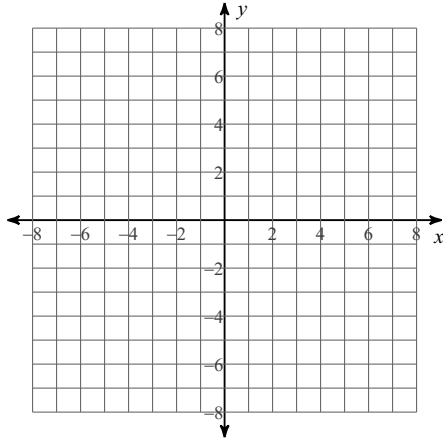


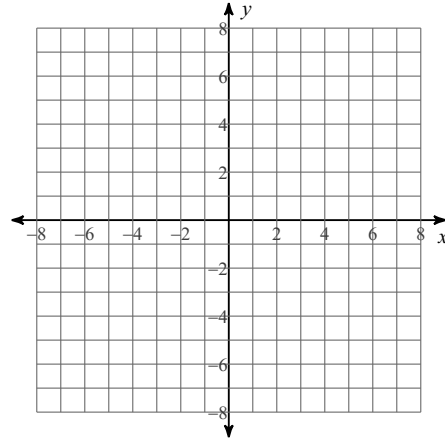
Chapter 10 Practice (Conics)

Identify the center and radius of each. Then sketch the graph.

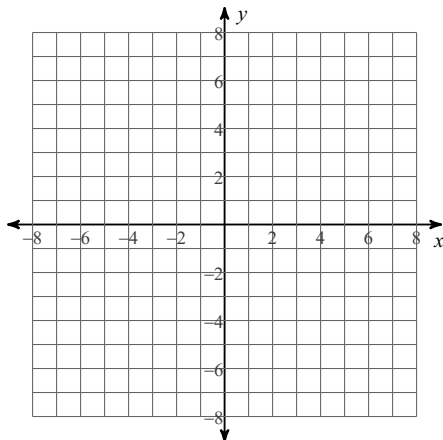
1) $(x + 2)^2 + (y - 4)^2 = 9$



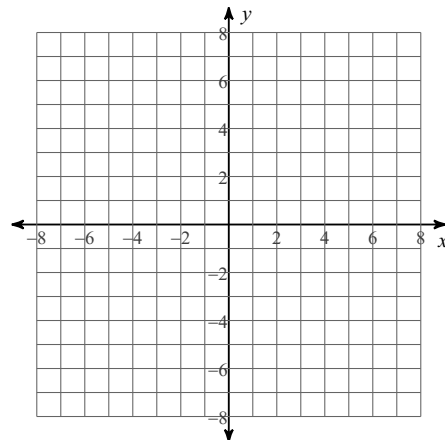
2) $(x + 3)^2 + (y - 4)^2 = 4$



3) $x^2 + y^2 - 2x - 2y - 2 = 0$



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



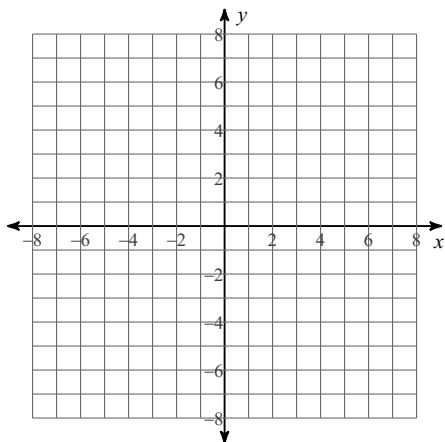
Use the information provided to write the standard form equation of each circle.

5) Center: $(-2, -11)$
Radius: 3

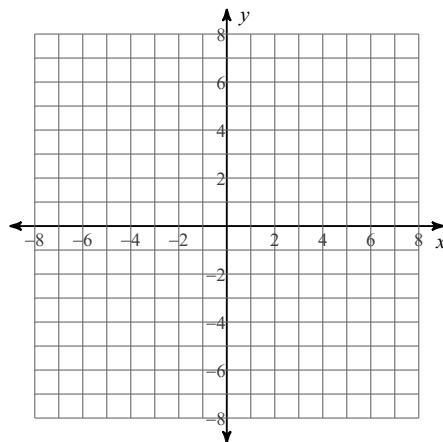
6) Center: $\left(-\frac{31}{2}, \frac{13}{2}\right)$
Radius: 2

Identify the center, vertices, foci, length of the major axis, and length of the minor axis of each. Then sketch the graph.

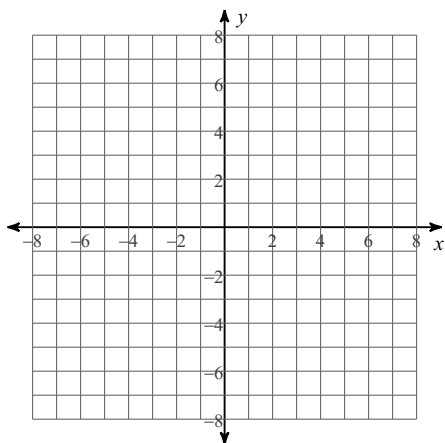
7) $\frac{(x+1)^2}{30} + \frac{y^2}{40} = 1$



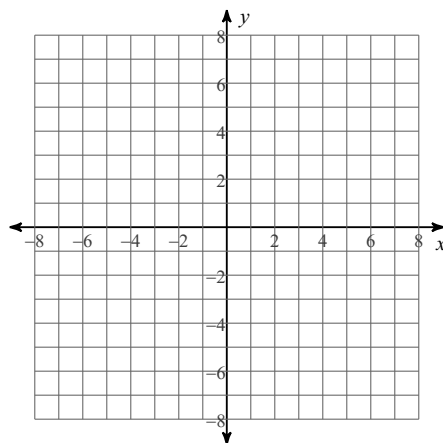
8) $(x+3)^2 + \frac{(y-1)^2}{36} = 1$



9) $x^2 + 36y^2 + 2x - 144y + 109 = 0$



10) $9x^2 + 4y^2 + 36x - 8y - 104 = 0$



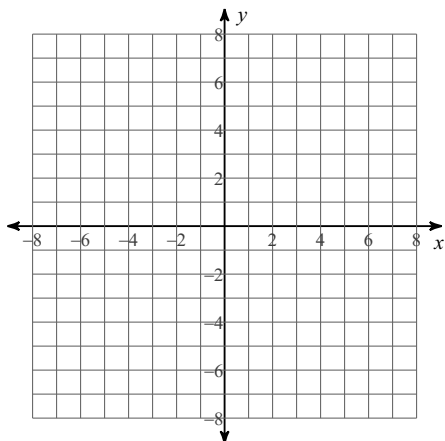
Use the information provided to write the standard form equation of each ellipse.

11) Vertices: $(17, 6), (-11, 6)$
 Foci: $(3 + 2\sqrt{13}, 6), (3 - 2\sqrt{13}, 6)$

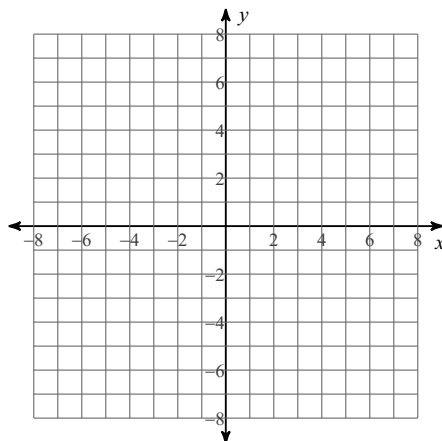
12) Vertices: $(-4, 10), (-4, -2)$
 Foci: $(-4, 4 + 3\sqrt{3}), (-4, 4 - 3\sqrt{3})$

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

13) $\frac{(x-1)^2}{10} - \frac{y^2}{10} = 1$

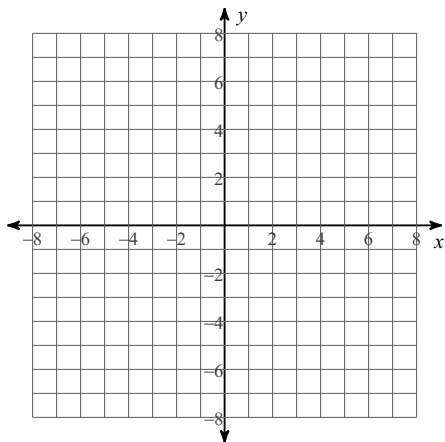


14) $\frac{(y+1)^2}{16} - \frac{(x+2)^2}{9} = 1$

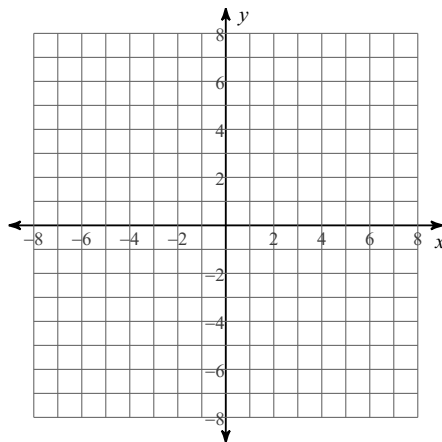


Identify the foci, direction of opening, length of the transverse axis, and length of the conjugate axis of each. Then sketch the graph.

15) $-x^2 + y^2 + 2x - 17 = 0$



16) $-9x^2 + 16y^2 + 18x - 64y - 89 = 0$



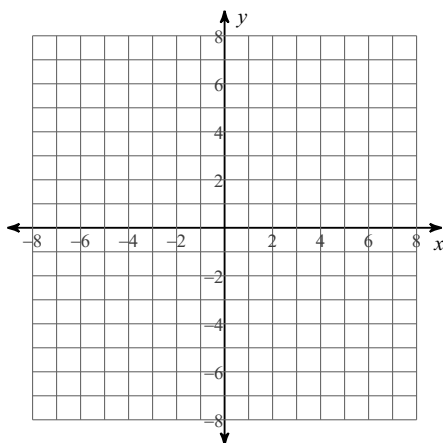
Use the information provided to write the standard form equation of each hyperbola.

- 17) Vertices: $(2, -4), (2, -14)$
 Endpoints of Conjugate Axis: $(9, -9)$
 $(-5, -9)$

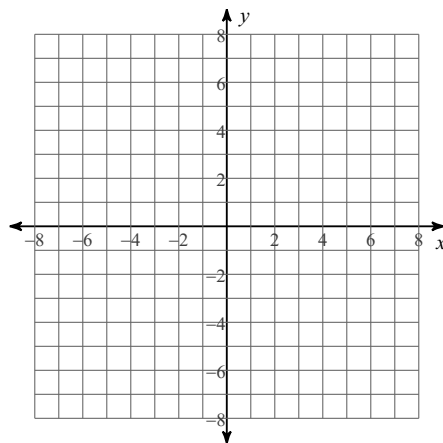
- 18) Vertices: $(8, 15), (8, 3)$
 Endpoints of Conjugate Axis: $(13, 9)$
 $(3, 9)$

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

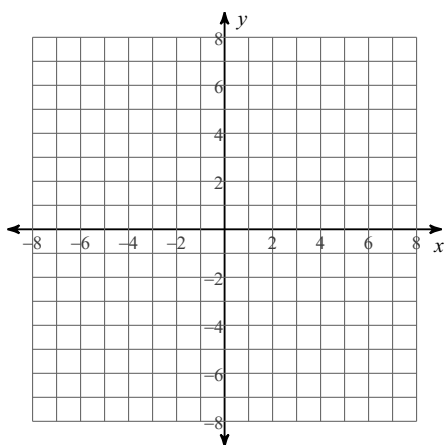
19) $-\frac{1}{4}(x + 1) = (y - 6)^2$



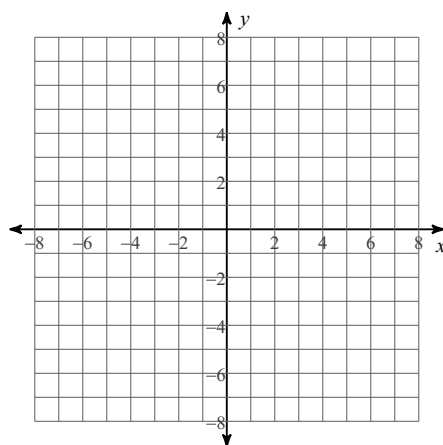
20) $x - 1 = (y - 3)^2$



$$21) -(y + 4) = (x + 5)^2$$



$$22) y - 2 = (x + 4)^2$$



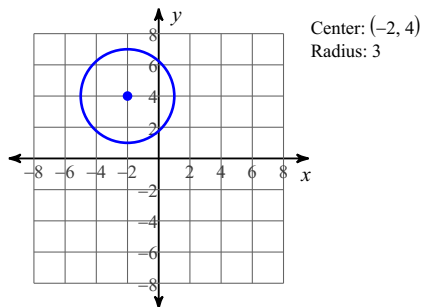
Use the information provided to write the transformational form equation of each parabola.

$$23) \text{Vertex: } (-9, -1), \text{Focus: } \left(-\frac{71}{8}, -1\right)$$

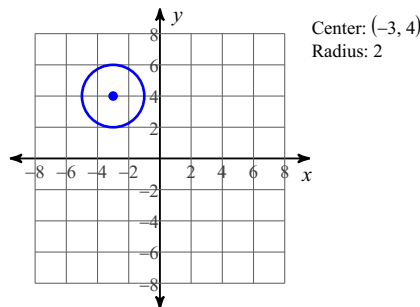
$$24) \text{Vertex: } (2, -2), \text{Focus: } \left(2, -\frac{31}{16}\right)$$

Answers to Chapter 10 Practice (Conics)

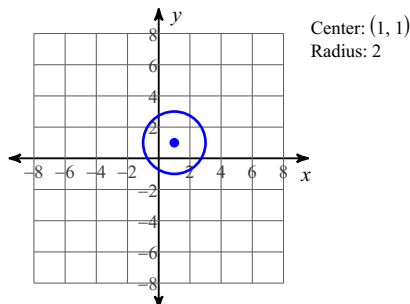
1)



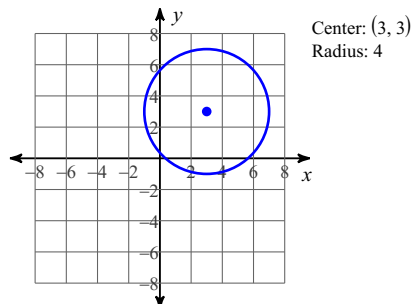
2)



3)



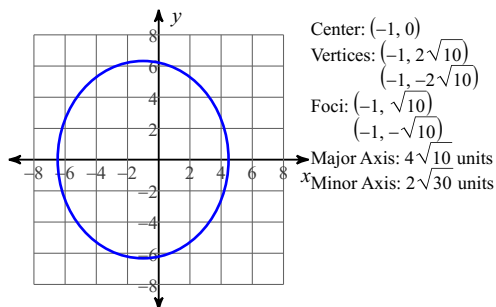
4)



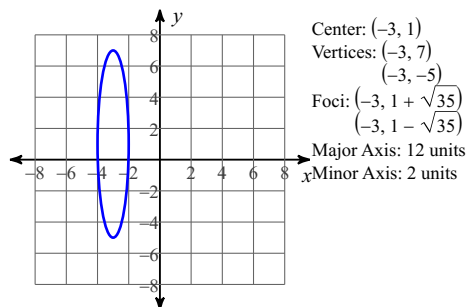
5) $(x + 2)^2 + (y + 11)^2 = 9$

6) $\left(x + \frac{31}{2}\right)^2 + \left(y - \frac{13}{2}\right)^2 = 4$

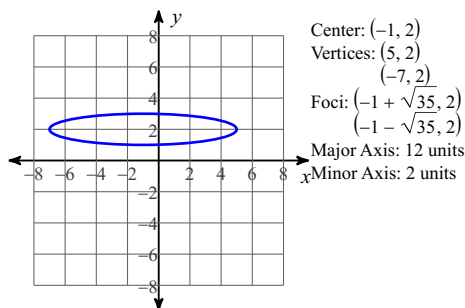
7)



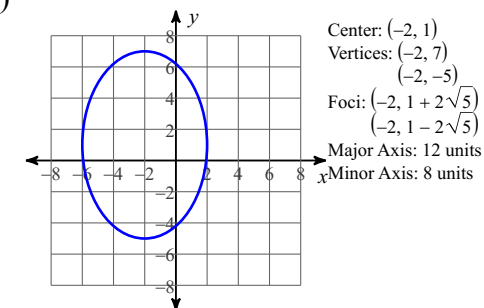
8)



9)



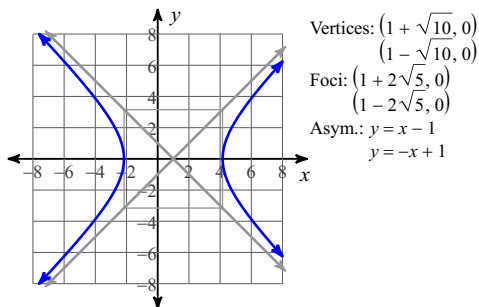
10)



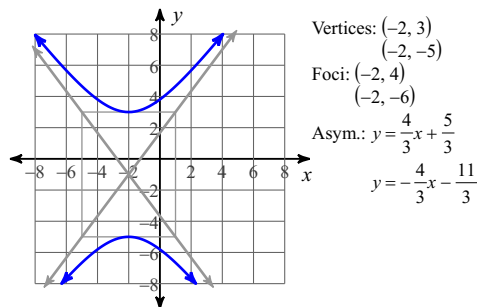
11) $\frac{(x - 3)^2}{196} + \frac{(y - 6)^2}{144} = 1$

12) $\frac{(x + 4)^2}{9} + \frac{(y - 4)^2}{36} = 1$

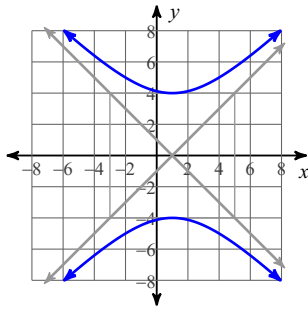
13)



14)

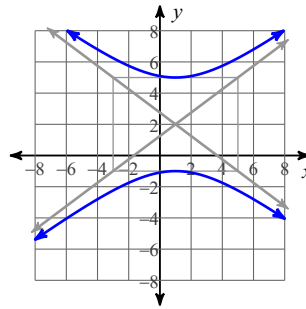


15)



Foci: $(1, 4\sqrt{2})$
 $(1, -4\sqrt{2})$
 Opens up/down
 Transverse Axis: 8 units
 Conjugate Axis: 8 units

16)

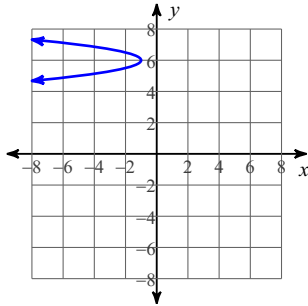


Foci: $(1, 7)$
 $(1, -3)$
 Opens up/down
 Transverse Axis: 6 units
 Conjugate Axis: 8 units

17) $\frac{(y+9)^2}{25} - \frac{(x-2)^2}{49} = 1$

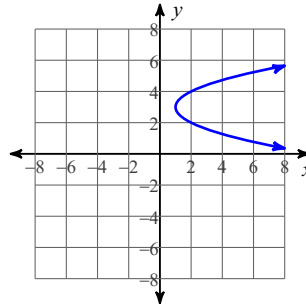
18) $\frac{(y-9)^2}{36} - \frac{(x-8)^2}{25} = 1$

19)



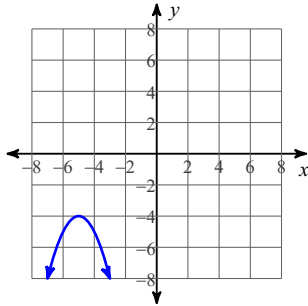
Vertex: $(-1, 6)$
 Focus: $(-\frac{17}{16}, 6)$
 Axis of Sym.: $y = 6$
 Directrix: $x = -\frac{15}{16}$

20)



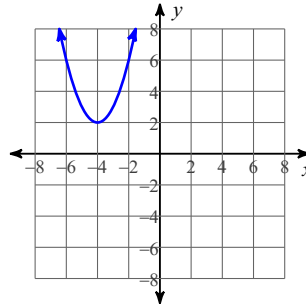
Vertex: $(1, 3)$
 Focus: $(\frac{5}{4}, 3)$
 Axis of Sym.: $y = 3$
 Directrix: $x = \frac{3}{4}$

21)



Vertex: $(-5, -4)$
 Focus: $(-5, -\frac{17}{4})$
 Axis of Sym.: $x = -5$
 Directrix: $y = -\frac{15}{4}$

22)



Vertex: $(-4, 2)$
 Focus: $(-4, \frac{9}{4})$
 Axis of Sym.: $x = -4$
 Directrix: $y = \frac{7}{4}$

23) $\frac{1}{2}(x+9) = (y+1)^2$

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