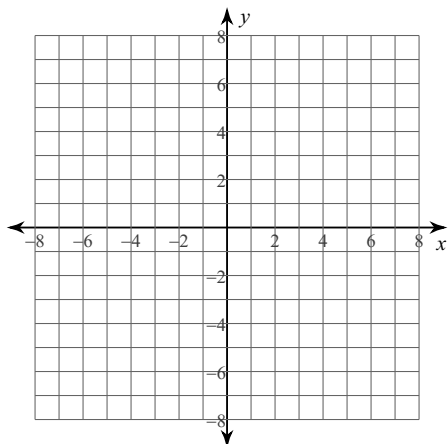


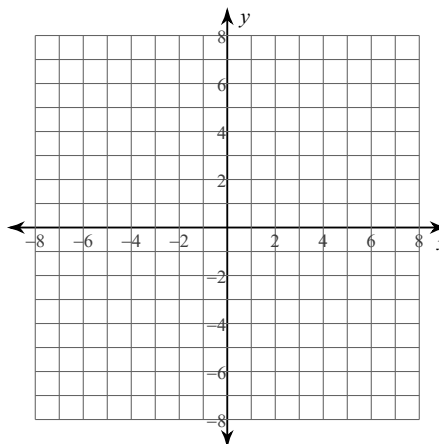
9.4 Graphing Ellipses

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

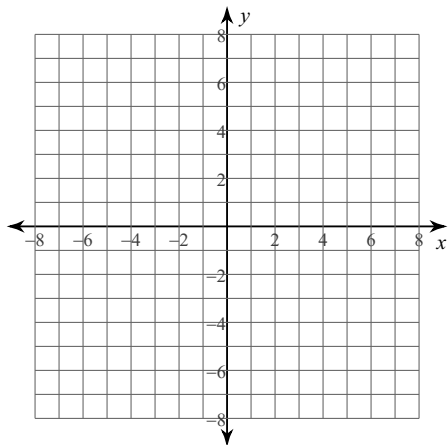
1) $\frac{(x+1)^2}{25} + \frac{(y-1)^2}{4} = 1$



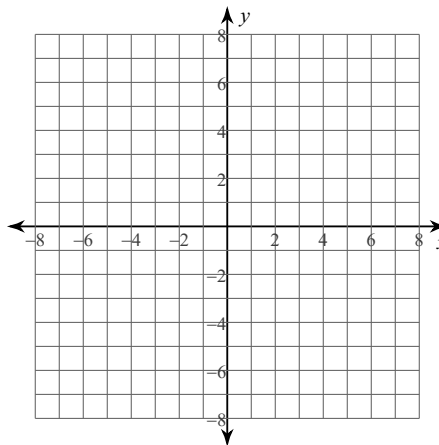
2) $\frac{(x-1)^2}{25} + y^2 = 1$



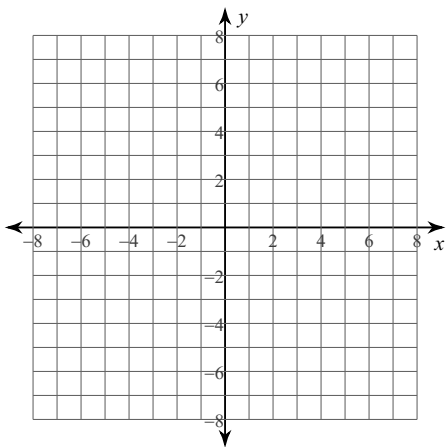
3) $(x+3)^2 + \frac{(y+2)^2}{16} = 1$



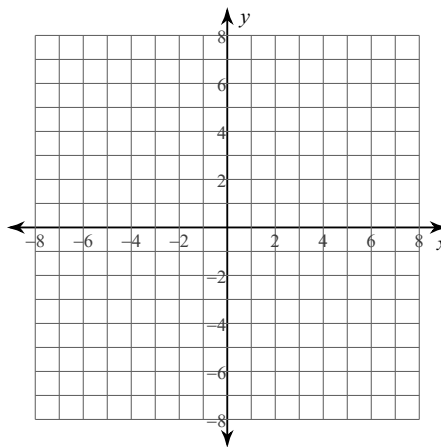
4) $\frac{(x-4)^2}{4} + \frac{(y-4)^2}{9} = 1$



5) $25x^2 + 9y^2 + 18y - 216 = 0$



6) $25x^2 + 16y^2 + 100x - 32y - 284 = 0$



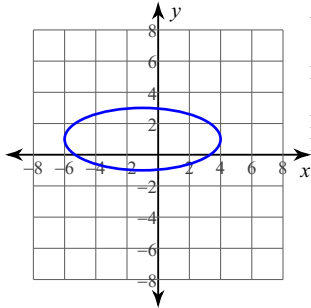
Use the information provided to write the standard form equation of each ellipse.

7) Vertices: $(8 + 2\sqrt{30}, -9), (8 - 2\sqrt{30}, -9)$
 Co-vertices: $(8, -9 + 3\sqrt{5}), (8, -9 - 3\sqrt{5})$

8) Vertices: $(-5, -5 + 4\sqrt{10}), (-5, -5 - 4\sqrt{10})$
 Co-vertices: $(-5 + 5\sqrt{3}, -5), (-5 - 5\sqrt{3}, -5)$

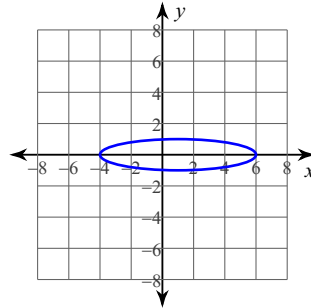
Answers to 9.4 Graphing Ellipses

1)



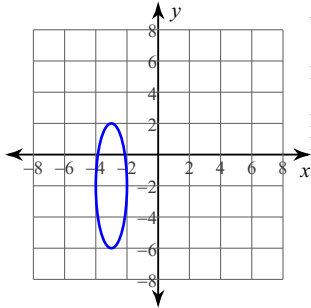
Vertices: $(4, 1)$
 $(-6, 1)$
 Foci: $(-1 + \sqrt{21}, 1)$
 $(-1 - \sqrt{21}, 1)$
 Major Axis: 10 units
 Minor Axis: 4 units

2)



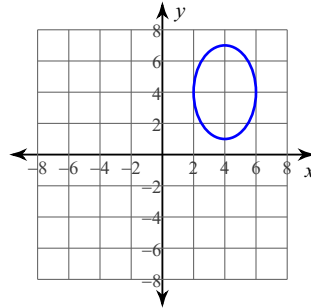
Vertices: $(6, 0)$
 $(-4, 0)$
 Foci: $(1 + 2\sqrt{6}, 0)$
 $(1 - 2\sqrt{6}, 0)$
 Major Axis: 10 units
 Minor Axis: 2 units

3)



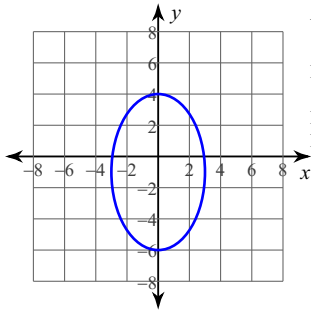
Vertices: $(-3, 2)$
 $(-3, -6)$
 Foci: $(-3, -2 + \sqrt{15})$
 $(-3, -2 - \sqrt{15})$
 Major Axis: 8 units
 Minor Axis: 2 units

4)



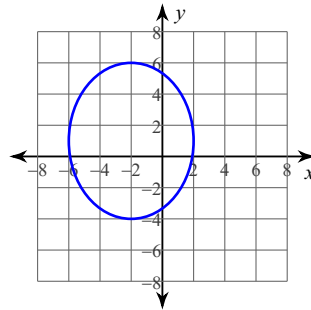
Vertices: $(4, 7)$
 $(4, 1)$
 Foci: $(4, 4 + \sqrt{5})$
 $(4, 4 - \sqrt{5})$
 Major Axis: 6 units
 Minor Axis: 4 units

5)



Vertices: $(0, 4)$
 $(0, -6)$
 Foci: $(0, 3)$
 $(0, -5)$
 Major Axis: 10 units
 Minor Axis: 6 units

6)



Vertices: $(-2, 6)$
 $(-2, -4)$
 Foci: $(-2, 4)$
 $(-2, -2)$
 Major Axis: 10 units
 Minor Axis: 8 units

7)
$$\frac{(x-8)^2}{120} + \frac{(y+9)^2}{45} = 1$$

8)
$$\frac{(x+5)^2}{75} + \frac{(y+5)^2}{160} = 1$$