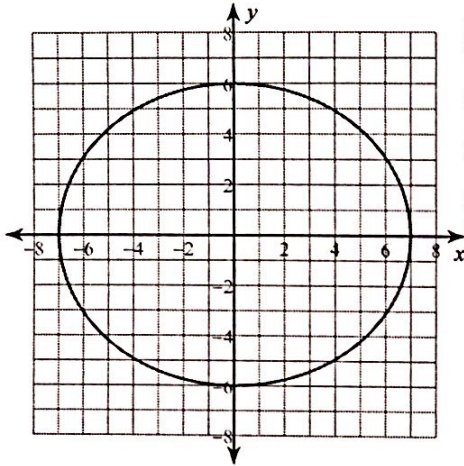


Quiz Review - Ellipses

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

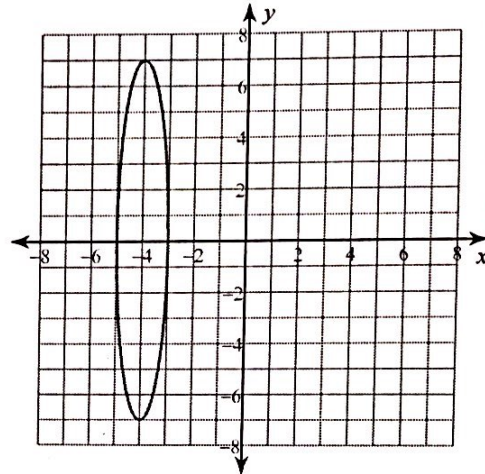


1) $\frac{x^2}{49} + \frac{y^2}{36} = 1$



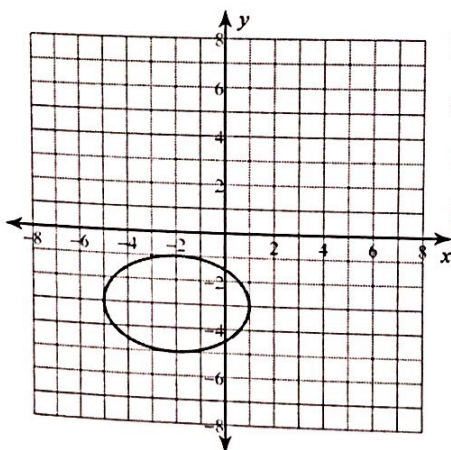
Center: (0, 0)
 Vertices: (7, 0)
 (-7, 0)
 Co-vertices: (0, 6)
 (0, -6)
 Foci: $(\sqrt{13}, 0)$
 $(-\sqrt{13}, 0)$
 Major Axis: 14 units
 Minor Axis: 12 units

2) $(x + 4)^2 + \frac{y^2}{49} = 1$



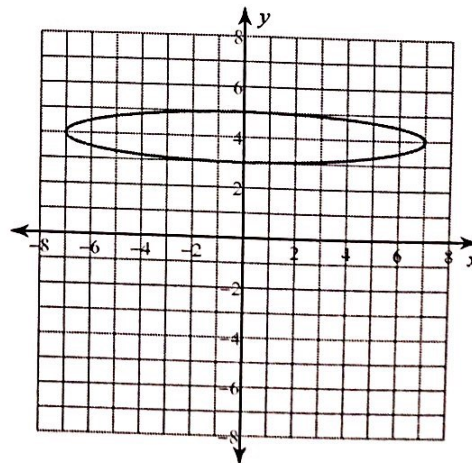
Center: (-4, 0)
 Vertices: (-4, 7)
 (-4, -7)
 Co-vertices: (-3, 0)
 (-5, 0)
 Foci: $(-4, 4\sqrt{3})$
 $(-4, -4\sqrt{3})$
 Major Axis: 14 units
 Minor Axis: 2 units

3) $\frac{(x + 2)^2}{9} + \frac{(y + 3)^2}{4} = 1$



Center: (-2, -3)
 Vertices: (1, -3)
 (-5, -3)
 Co-vertices: (-2, -1)
 (-2, -5)
 Foci: $(-2 + \sqrt{5}, -3)$
 $(-2 - \sqrt{5}, -3)$
 Major Axis: 6 units
 Minor Axis: 4 units

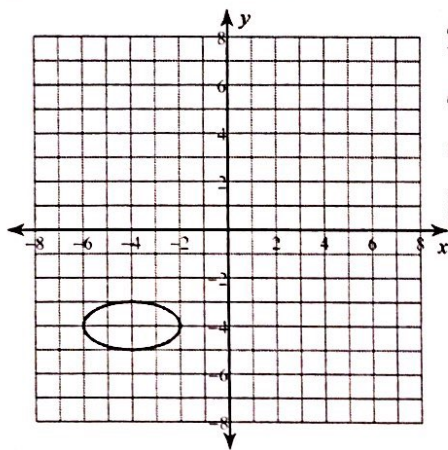
4) $x^2 + 49y^2 - 392y + 735 = 0$



Center: (0, 4)
 Vertices: (7, 4)
 (-7, 4)
 Co-vertices: (0, 5)
 (0, 3)
 Foci: $(4\sqrt{3}, 4)$
 $(-4\sqrt{3}, 4)$
 Major Axis: 14 units
 Minor Axis: 2 units

$\frac{x^2}{49} + (y - 4)^2 = 1$

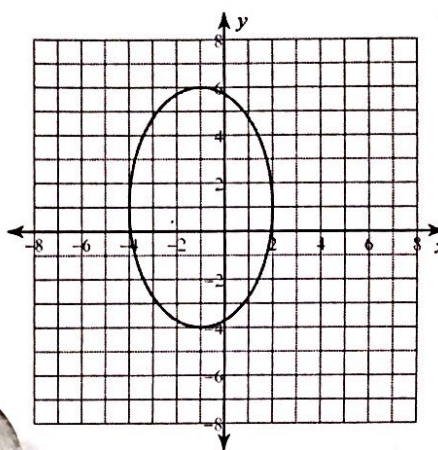
$$5) x^2 + 4y^2 + 8x + 32y + 76 = 0$$



Center: $(-4, -4)$
 Vertices: $(-2, -4)$
 $(-6, -4)$
 Co-vertices: $(-4, -3)$
 $(-4, -5)$
 Foci: $(-4 + \sqrt{3}, -4)$
 $(-4 - \sqrt{3}, -4)$
 Major Axis: 4 units
 Minor Axis: 2 units

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

$$6) 25x^2 + 9y^2 + 50x - 18y - 191 = 0$$



Center: $(-1, 1)$
 Vertices: $(-1, 6)$
 $(-1, -4)$
 Co-vertices: $(2, 1)$
 $(-4, 1)$
 Foci: $(-1, 5)$
 $(-1, -3)$
 Major Axis: 10 units
 Minor Axis: 6 units

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



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

- 7) Vertices: $(6, -4), (-18, -4)$
 Foci: $(-6 + 2\sqrt{11}, -4), (-6 - 2\sqrt{11}, -4)$

$$\frac{(x+6)^2}{144} + \frac{(y+4)^2}{100} = 1$$

- 8) Foci: $(-7, 1 + \sqrt{33}), (-7, 1 - \sqrt{33})$
 Co-vertices: $(-3, 1), (-11, 1)$

$$\frac{(x+7)^2}{16} + \frac{(y-1)^2}{49} = 1$$

- 9) Center: $(0, 4)$
 Vertex: $(-13, 4)$
 Focus: $(-2\sqrt{30}, 4)$

$$\frac{x^2}{169} + \frac{(y-4)^2}{49} = 1$$

- 10) Center: $(-2, 8)$
 Focus: $(-2, 8 + \sqrt{30})$
 Co-vertex: $(-2 + 2\sqrt{30}, 8)$

$$\frac{(x+2)^2}{120} + \frac{(y-8)^2}{150} = 1$$

- 11) Vertices: $(11, -10), (-15, -10)$
 Foci: $(-2 + 2\sqrt{22}, -10), (-2 - 2\sqrt{22}, -10)$

$$\frac{(x+2)^2}{169} + \frac{(y+10)^2}{81} = 1$$

- 12) Foci: $(-9, -2 + \sqrt{91}), (-9, -2 - \sqrt{91})$
 Endpoints of minor axis: $(-6, -2), (-12, -2)$

$$\frac{(x+9)^2}{9} + \frac{(y+2)^2}{100} = 1$$