

Name _____

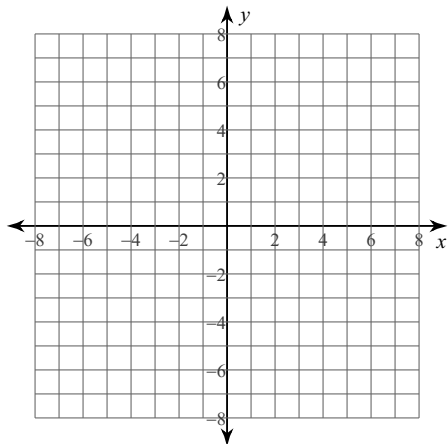
Name _____

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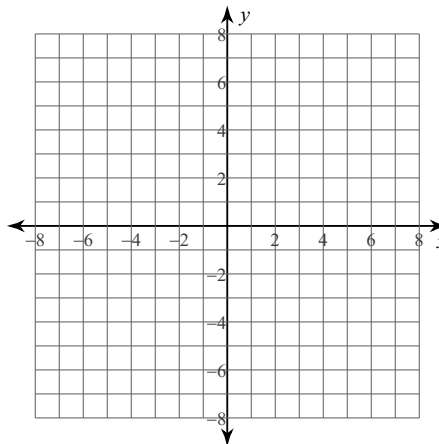
Conics Rally Coach

Identify the vertex, focus, axis of symmetry, directrix, direction of opening, and length of the latus rectum of each. Then sketch the graph.

$$1) -2(y - 2) = (x + 5)^2$$

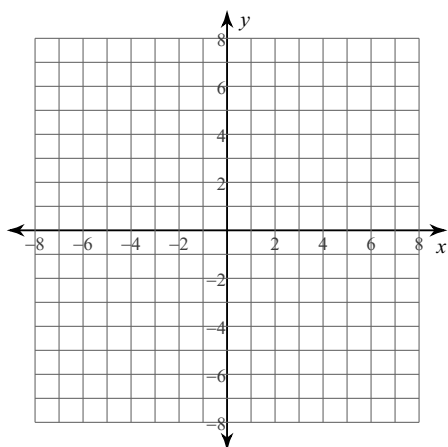


$$2) 4(y + 1) = (x - 2)^2$$

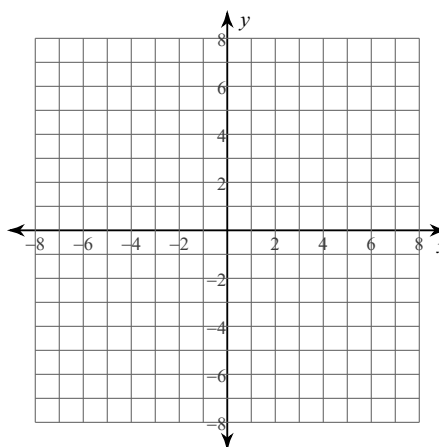


Identify the center, vertices, foci, length of the major axis, and length of the minor axis of each. Then sketch the graph.

$$3) \frac{x^2}{49} + \frac{(y - 4)^2}{9} = 1$$

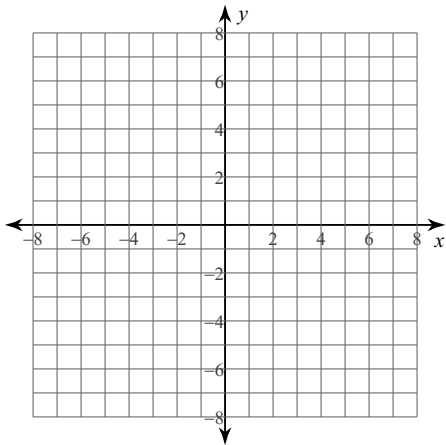


$$4) \frac{(x + 1)^2}{36} + \frac{y^2}{49} = 1$$

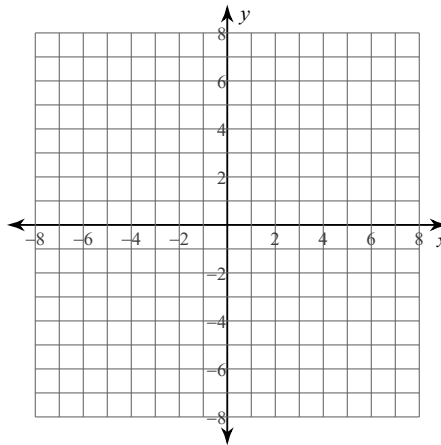


Identify the vertices, foci, asymptotes, direction of opening, length of the transverse axis, and length of the conjugate axis of each. Then sketch the graph.

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



6) $\frac{(y-1)^2}{4} - \frac{(x-1)^2}{16} = 1$



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

7) Vertex: $(0, 2)$, Directrix: $x = \frac{1}{4}$

8) Vertex: $(-8, 4)$, Directrix: $x = -9$

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

9) Foci: $(-9, 2), (-9, -4)$
Endpoints of minor axis: $(-5, -1), (-13, -1)$

10) Foci: $(20, -2), (-4, -2)$
Endpoints of minor axis: $(8, 3), (8, -7)$

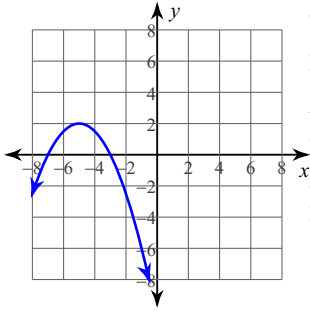
Use the information provided to write the standard form equation of each hyperbola.

11) Vertices: $(0, 6), (0, -6)$
Perimeter of Central Rectangle = 52

12) Vertices: $(3, 0), (-3, 0)$
Perimeter of Central Rectangle = 60

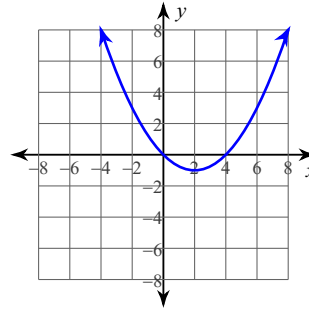
Answers to Conics Rally Coach

1)



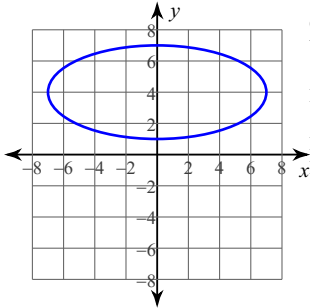
Vertex: $(-5, 2)$
 Focus: $(-5, \frac{3}{2})$
 Axis of Sym.: $x = -5$
 Directrix: $y = \frac{5}{2}$
 Opens: Down
 Latus rectum: 2 units

2)



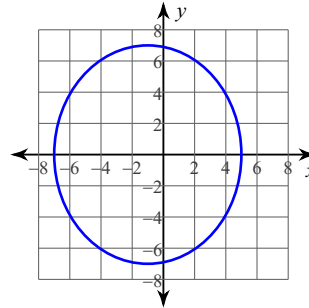
Vertex: $(2, -1)$
 Focus: $(2, 0)$
 Axis of Sym.: $x = 2$
 Directrix: $y = -2$
 Opens: Up
 Latus rectum: 4 units

3)



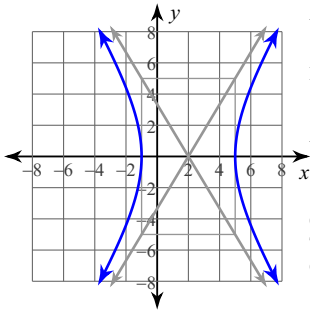
Center: $(0, 4)$
 Vertices: $(7, 4)$
 $(-7, 4)$
 Foci: $(2\sqrt{10}, 4)$
 $(-2\sqrt{10}, 4)$
 Major Axis: 14 units
 Minor Axis: 6 units

4)



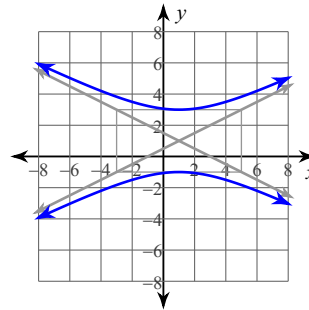
Center: $(-1, 0)$
 Vertices: $(-1, 7)$
 $(-1, -7)$
 Foci: $(-1, \sqrt{13})$
 $(-1, -\sqrt{13})$
 Major Axis: 14 units
 Minor Axis: 12 units

5)



Vertices: $(5, 0)$
 $(-1, 0)$
 Foci: $(2 + \sqrt{34}, 0)$
 $(2 - \sqrt{34}, 0)$
 Asym.: $y = \frac{5}{3}x - \frac{10}{3}$
 $y = -\frac{5}{3}x + \frac{10}{3}$
 Opens left/right
 Transverse Axis: 6 units
 Conjugate Axis: 10 units

6)



Vertices: $(1, 3)$
 $(1, -1)$
 Foci: $(1, 1 + 2\sqrt{5})$
 $(1, 1 - 2\sqrt{5})$
 Asym.: $y = \frac{1}{2}x + \frac{1}{2}$
 $y = -\frac{1}{2}x + \frac{3}{2}$
 Opens up/down
 Transverse Axis: 4 units
 Conjugate Axis: 8 units

7) $-x = (y - 2)^2$

8) $4(x + 8) = (y - 4)^2$

9) $\frac{(x + 9)^2}{16} + \frac{(y + 1)^2}{25} = 1$

10) $\frac{(x - 8)^2}{169} + \frac{(y + 2)^2}{25} = 1$

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

12) $\frac{x^2}{9} - \frac{y^2}{144} = 1$