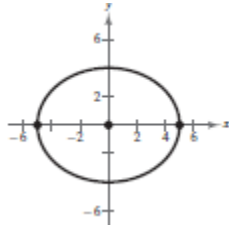


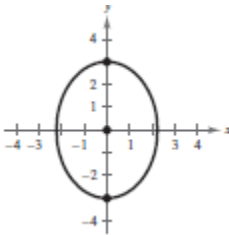
Ellipses Solution sheet

A) Find the center, Vertices, foci, and eccentricity of the ellipse and then sketch the graph.

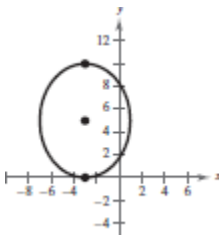
1. Center: $(0,0)$ Vertices: $(\pm 5,0)$
Foci: $(\pm 3,0)$ Eccentricity: $\frac{3}{5}$



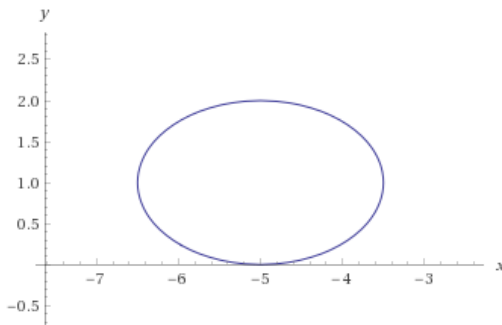
2. Center: $(0,0)$ Vertices: $(0, \pm 3)$
Foci: $(0, \pm 2)$ Eccentricity: $\frac{2}{3}$



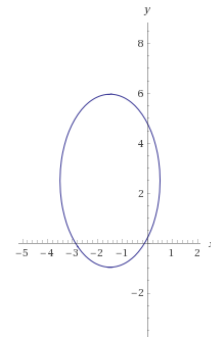
3. Center: $(-3,5)$ Vertices: $(3,10)(-3,0)$
Foci: $(-3,8)(-3,2)$ Eccentricity: $\frac{3}{5}$



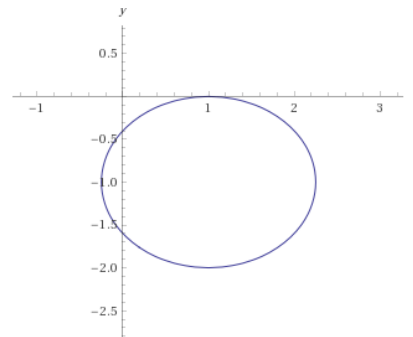
4. Center: $(-5,1)$
Vertices: $(-\frac{7}{2}, 1)(-\frac{13}{2}, 1)$
Foci: $(-5 \pm \frac{\sqrt{5}}{2}, 1)$ Eccentricity: $\frac{\sqrt{5}}{2}$



5. Center: $(-\frac{3}{2}, \frac{5}{2})$ Eccentricity: $\frac{\sqrt{6}}{3}$
Vertices: $(-\frac{3}{2}, \frac{5}{2} \pm 2\sqrt{3})$
Foci: $(-\frac{3}{2}, \frac{5}{2} \pm 2\sqrt{2})$



6. Center: $(1, -1)$
Vertices: $(\frac{9}{4}, -1), (-\frac{1}{4}, -1)$
Foci: $(\frac{7}{4}, -1)(\frac{1}{4}, -1)$ Eccentricity: $\frac{3}{5}$



B) Find the standard form of the equation of the ellipse with center at the origin

- $\frac{x^2}{36} + \frac{y^2}{32} = 1$
- $\frac{x^2}{36} + \frac{y^2}{11} = 1$
- $\frac{21x^2}{400} + \frac{y^2}{25} = 1$

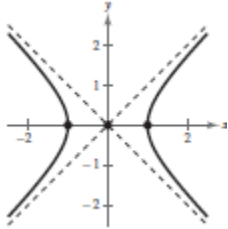
C) Find the standard form of the equation of the specified ellipse

- $\frac{(x-2)^2}{1} + \frac{(y-3)^2}{9} = 1$
- $\frac{(x+2)^2}{16} + \frac{(y-3)^2}{9} = 1$
- $\frac{(x-2)^2}{4} + \frac{(y-4)^2}{12} = 1$
- $\frac{x^2}{16} + \frac{(y-4)^2}{12} = 1$

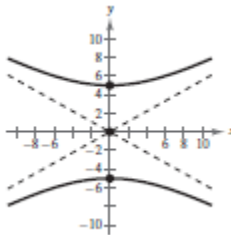
Hyperbola Solution Sheet

A) Find the center, vertices, foci, and the equations of the asymptotes of the hyperbola, and sketch its graph.

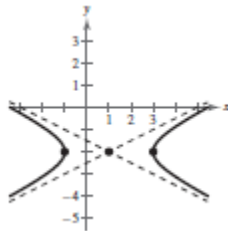
1. Center: $(0,0)$ Vertices: $(\pm 1,0)$
Foci: $(\pm\sqrt{2}, 0)$ Asymptote: $\pm x$



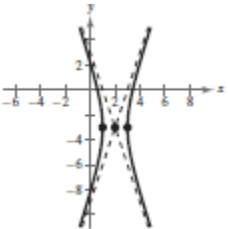
2. Center: $(0,0)$ Vertices: $(0, \pm 5)$
Foci: $(0, \pm\sqrt{106})$ Asymptote: $\pm \frac{5}{9}x$



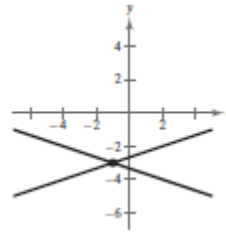
3. Center: $(1, -2)$ Vertices:
 $(3, -2), (-1, -2)$
Foci: $(1 \pm \sqrt{5}, -2)$
Asymptote: $y = -2 \pm \frac{1}{2}(x - 1)$



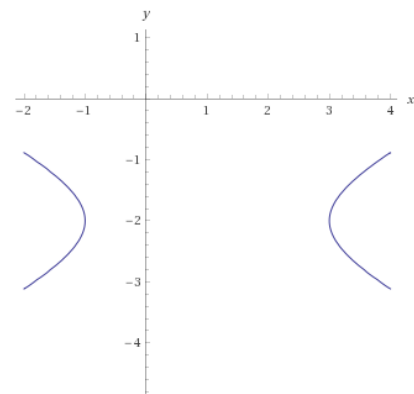
4. Center: $(2, -3)$
Vertices: $(3, -3)(1, -3)$
Foci: $(2 \pm \sqrt{10}, -3)$
Asymptote: $y = -3 \pm 3(x - 2)$



5. The graph of this equation is two lines intersect at $(-1, -3)$



6. Center: $(1, -2)$
Vertices: $(3, -2)(1, -2)$
Foci: $(1 \pm \sqrt{5}, -2)$
Asymptote: $-2 \pm \frac{1}{2}(x - 1)$



B) Find the standard form of the equation of the specified hyperbola with the center at the origin

- $\frac{y^2}{4} - \frac{x^2}{12} = 1$
- $\frac{(y-2)^2}{4} - \frac{x^2}{4} = 1$
- $\frac{(x-2)^2}{1} - \frac{(y-2)^2}{1} = 1$
- $\frac{(x-3)^2}{9} - \frac{(y-2)^2}{4} = 1$

C) Word Problem

1. The vertex of the mirror if its mount has coordinates

$$(24, 24) = (12(\sqrt{5} - 1), 0) \approx (14.83, 0)$$

Hyperbola Solution Sheet