

Unit 8 Conic Section Review

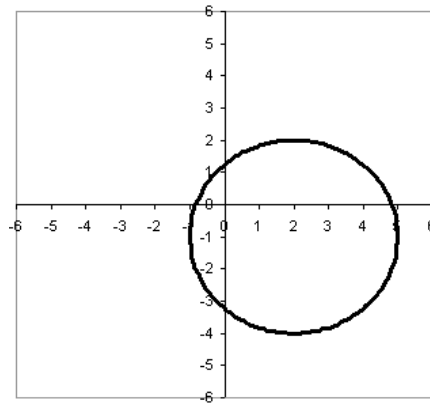
Name _____ Period _____ Date _____

Circle: $(x - h)^2 + (y - k)^2 = r^2$

Center: _____

Radius: _____

EX: Write the equation of the circle in standard form



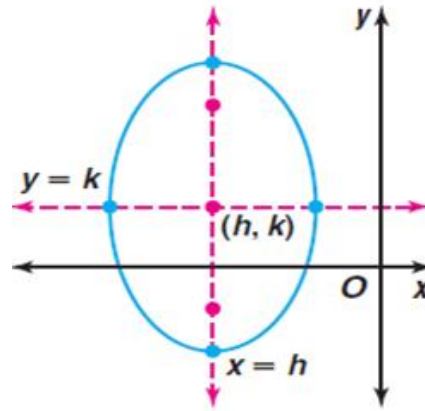
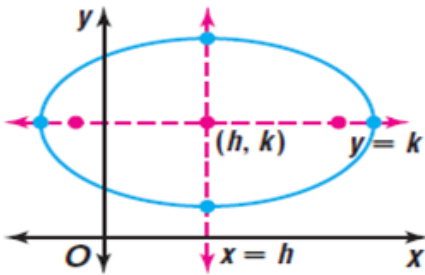
#1 – 4, write the standard form of the equation of each circle described.

1. Center at $(-2, 2)$ and radius $\sqrt{2}$ 2. Center at $(0, -4)$ and tangent to the x-axis

3. $y^2 + 2x + x^2 = 24y - 120$ 4. $x^2 + y^2 + 6x - 8y + 18 = 0$

5. Write the standard form of the equation of the circle that has diameter endpoints at $(-3, 11)$ and $(3, -13)$. Then identify the center and the radius.

Ellipse: $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$



#7 – 9, identify the center, vertices, and foci of each ellipse. Then graph the equation.

7. $\frac{(x-3)^2}{49} + \frac{(y-5)^2}{4} = 1$

Center: _____

Maj Vertices: _____

Min Vertices: _____

Foci: _____

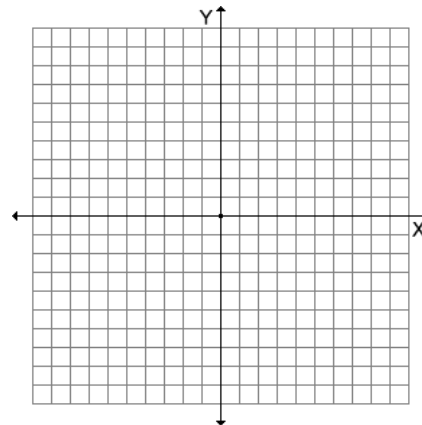
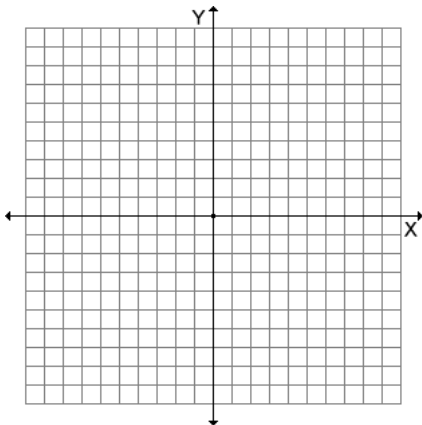
8. $\frac{x^2}{9} + \frac{(y-2)^2}{16} = 1$

Center: _____

Maj Vertices: _____

Min Vertices: _____

Foci: _____



9. $126y + 9y^2 - 8x - 131 = -4x^2$

Center: _____

Maj Vertices: _____

Min Vertices: _____

Foci: _____

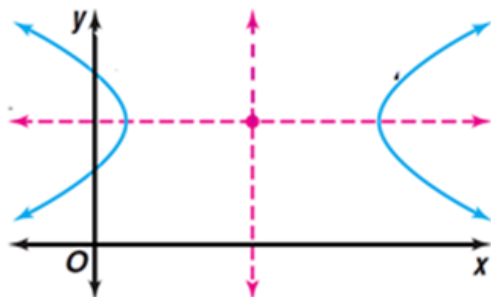
#10 - 11, write the standard form of the equation of the ellipse.

10. Center is at (4, -8), Vertical Major Axis is 18 units and Minor axis is 14 units.

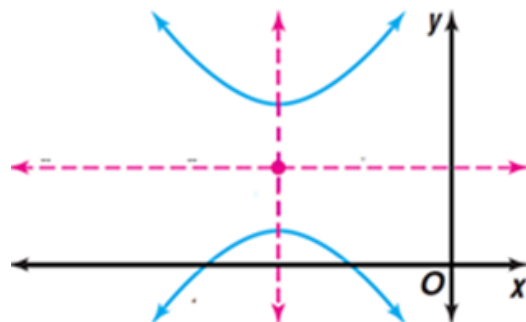
11. Endpoints of major axis is (4, 18) and (4, -4). Endpoints of minor axis are (12, 7) and (-4, 7)

Hyperbola

$$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$$

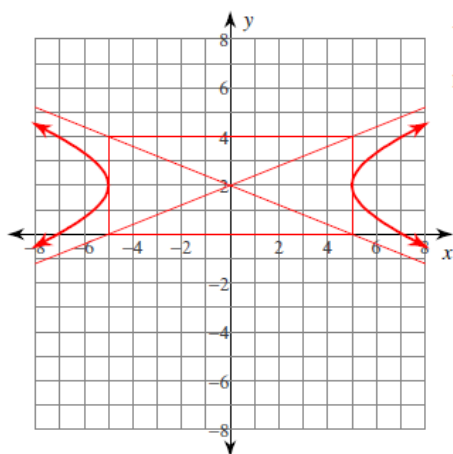


$$\frac{(y-k)^2}{b^2} - \frac{(x-h)^2}{a^2} = 1$$

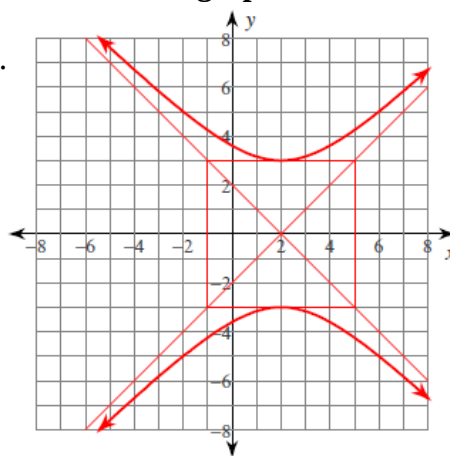


#12 - 13, write the standard form of the equation of the hyperbola for each graph.

12.



13.



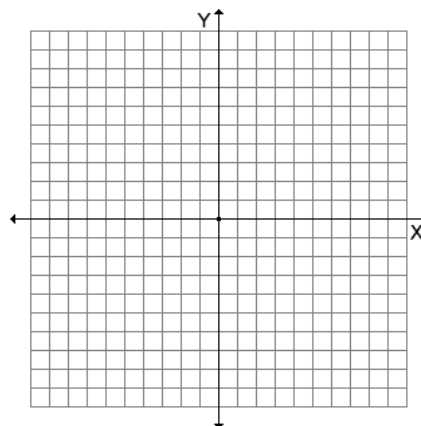
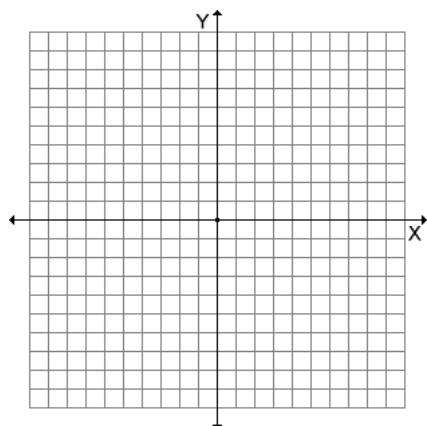
#14 - 15, identify the center, vertices, and slope of the asymptotes for each hyperbola. Then graph each equation.

14. $\frac{x^2}{81} - \frac{y^2}{4} = 1$

15. $\frac{(y+8)^2}{4} - \frac{(x+2)^2}{9} = 1$

Center: _____
 Vertices: _____
 Foci: _____
 Slope: _____

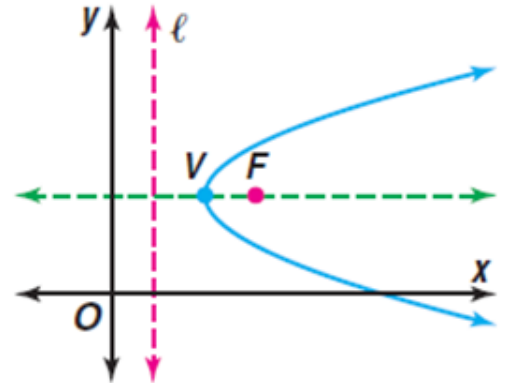
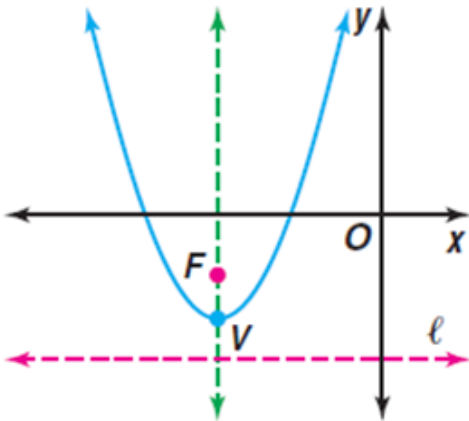
Center: _____
 Vertices: _____
 Foci: _____
 Slope: _____



Parabola

$$(x - h)^2 = 4p(y - k)$$

$$(y - k)^2 = 4p(x - h)$$



#16 – 19 For the equation of each parabola, find the coordinates of the vertex and focus, and the equations of the directrix and axis of symmetry. Then graph #16 & 17 (be sure to graph the focus and directrix)

16. $x^2 = -4(y - 3)$

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____

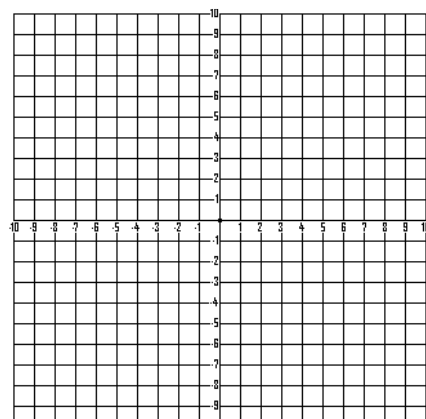
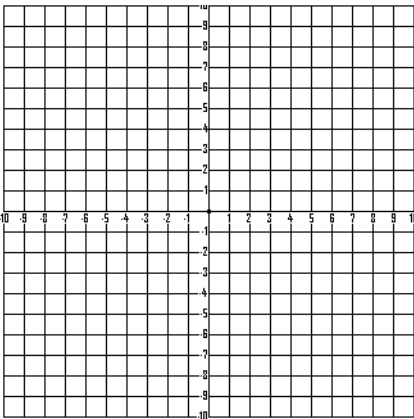
17. $y^2 + 12x = 2y - 13$

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____



18. $x^2 + 10x + 25 = -8y + 24$

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____

19. $3x^2 - 30y - 18x + 87 = 0$

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____