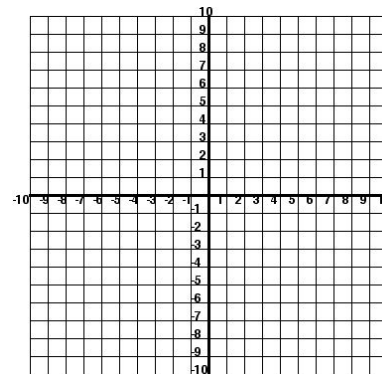
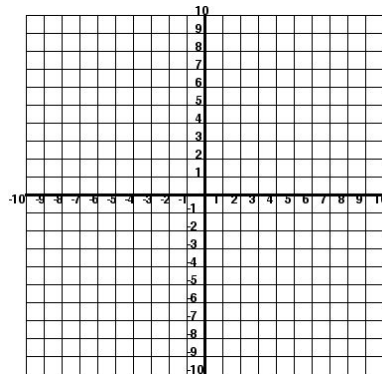
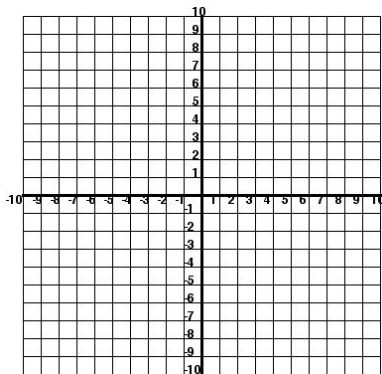


1. Graph the following ellipses, then name the center, vertices, and foci for each. In 4-6, name the lines of symmetry for each ellipse.

1. $\frac{x^2}{9} + \frac{y^2}{4} = 1$

2. $\frac{x^2}{4} + \frac{y^2}{16} = 1$

3. $\frac{(y-1)^2}{36} + \frac{(x+3)^2}{25} = 1$



center:

vertices:

co-vertices:

foci:

Eccentricity:

center:

vertices:

co-vertices:

foci:

Eccentricity:

center:

vertices:

co-vertices:

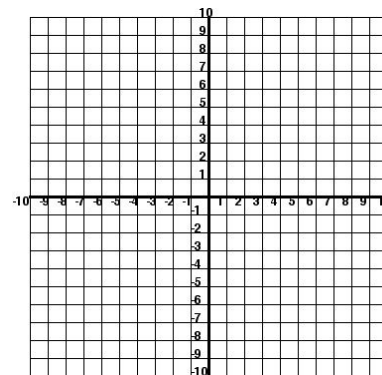
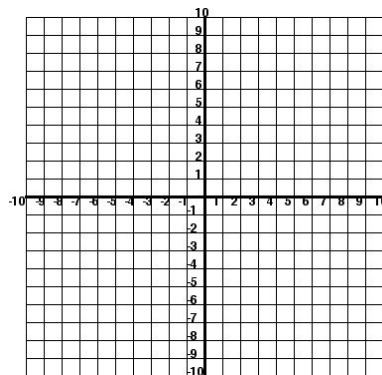
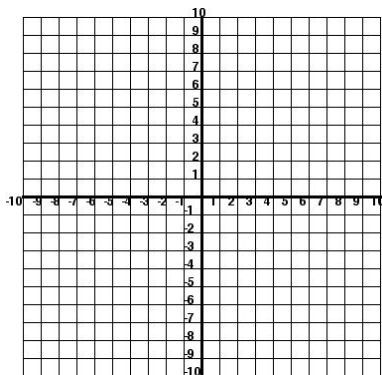
foci:

Eccentricity:

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

5. $\frac{x^2}{100} + \frac{(y-3)^2}{36} = 1$

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



center:

vertices:

co-vertices:

foci:

Eccentricity:

center:

vertices:

co-vertices:

foci:

Eccentricity:

center:

vertices:

co-vertices:

foci:

Eccentricity:

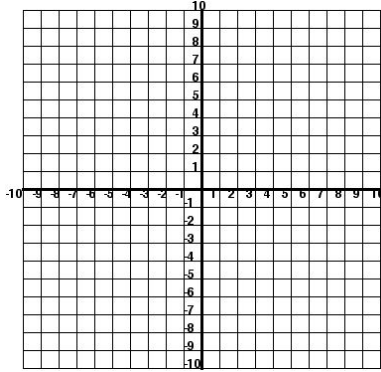
II. Use the given information to write the equation of each ellipse in standard form, then graph the ellipse.

5. vertex: (2, 0)
focus: (1, 0)
centered at the origin

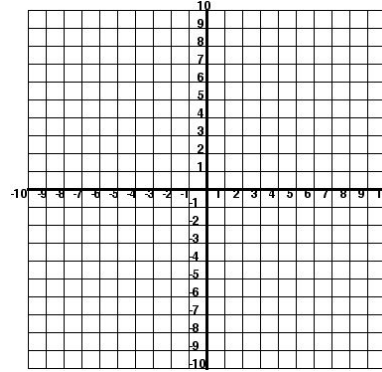
6. vertex: (0, 6)
co-vertex: (5, 0)
centered at the origin

7. vertices: (-2, -5), (-2, 5)
foci: (-2, -3), (-2, 3)

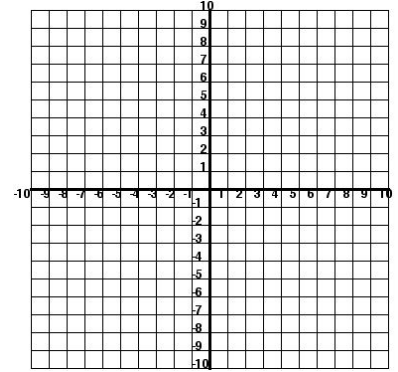
Equation: _____



Equation: _____



Equation: _____

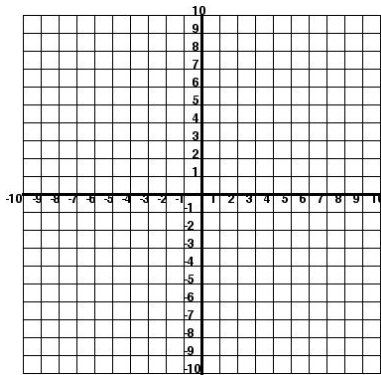


8. vertices: (-4, 6), (8, 6)
co-vertices: (2, 8), (2, 4)

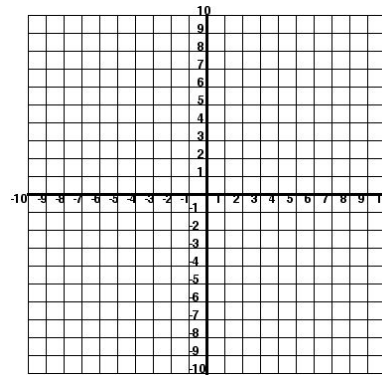
9. vertices: (-2, 2), (4, 2)
co-vertices: (1, 1), (1, 3)

10. vertices: (2, 0), (2, 4)
foci: (2, 1), (2, 3)

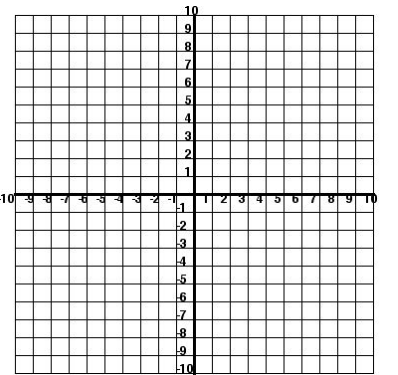
Equation: _____



Equation: _____



Equation: _____



III. Write the equation of each ellipse in standard form. Identify the vertices and foci of the ellipse

11. $4x^2 + y^2 - 8x - 8 = 0$

12. $9x^2 + 4y^2 - 36x - 24y + 36 = 0$

13. $3x^2 + 5y^2 - 6x + 30y + 3 = 0$

14. $9x^2 + y^2 + 72x - 2y + 136 = 0$

15. Which conic is formed from the intersection of a cone and a plane neither parallel nor perpendicular to the cone's base nor parallel to the cone's side?