Name _____

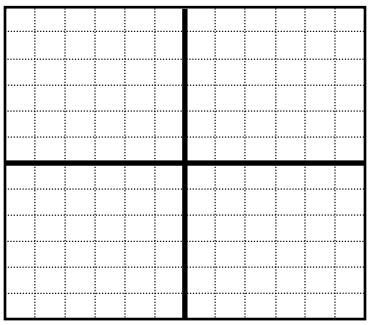
The Ellipse

Standard Forms of an Ellipse:

Horizontal Ellipse:	**Vertical Ellipse:**
$\frac{(x-h)^2}{a^2}+\frac{(y-k)^2}{b^2}=1$	$\frac{(x-h)^2}{b^2}+\frac{(y-k)^2}{a^2}=1$
Vertices: $(h\pm a,k)$	**Vertices:** $(h,k\pm a)$
Co-Vertices: $(h,k\pm b)$	**Co-Vertices:** $(h\pm b,k)$
Foci: $(h\pm c,k)$	**Foci:** $(h,k\pm c)$

Graph each ellipse and identify the center, vertices, co-vertices, and give the location of its foci.

1) $4x^2+25y^2=100$



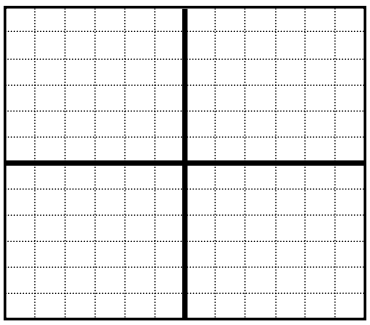
Center:

Vertices:

Co-Vertices:

Foci:

2) $16x^2+4y^2=64$



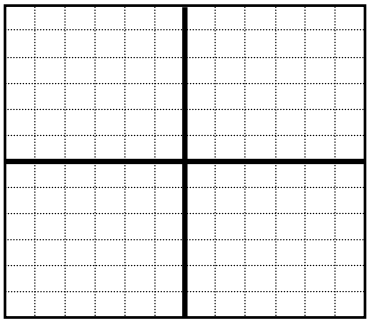
Center:

Vertices:

Co-Vertices:

Foci:

3) $\frac{(x-4)^2}{20}+\frac{(y+2)^2}{36}=1$



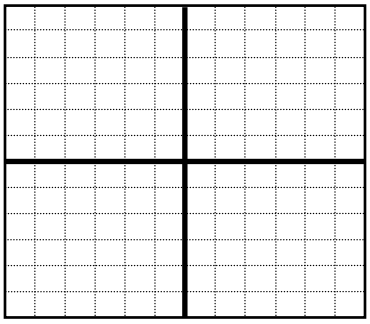
Center:

Vertices:

Co-Vertices:

Foci:

4) $\frac{(x+3)^2}{25}+\frac{(y-1)^2}{4}=1$



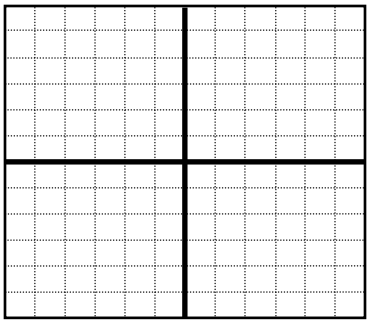
Center:

Vertices:

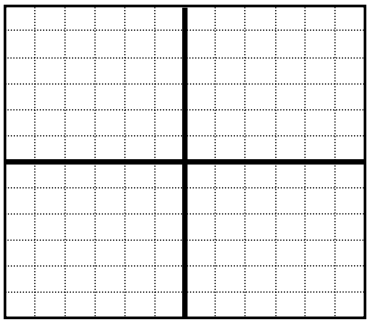
Co-Vertices:

Foci:

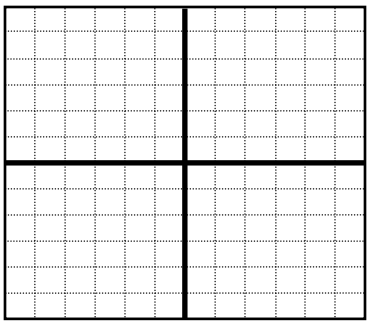
5) Write an equation of the ellipse with the vertex (-6, 0), co-vertex (0, -1), and center (0,0).



6) Write an equation of the ellipse with the center (1, 4), focus $\left(1, 4+\sqrt{12}\right)$, and Vertex (1,0),

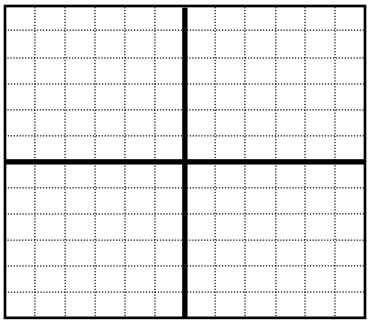


7) Write an equation of the ellipse with the vertex (-1,-2), focus (-1, -1), and center (-1, 3).



8) Write the equation of the ellipse in standard form. Then graph.

$2x^2 + y^2 + 8y + 6 = 0$



9) Write the equation of the ellipse in standard form. Then graph.

$x^2 + 4y^2 - 2x - 3 = 0$