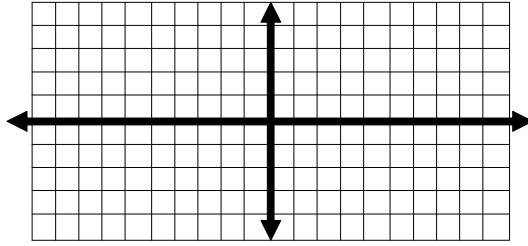


## Ellipse Exploration

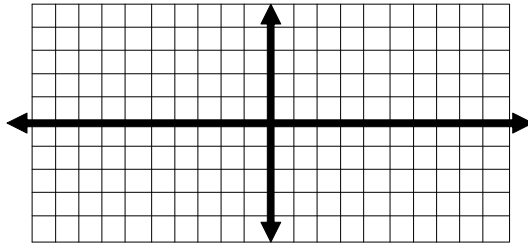
### AA 2:

Solve the following for y and graph.

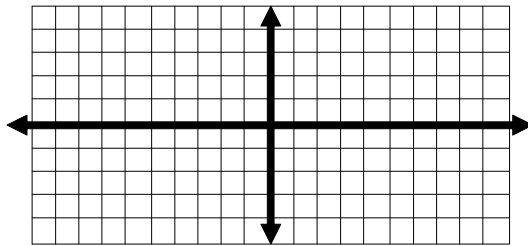
1.  $\frac{x^2}{9} + \frac{y^2}{25} = 1$



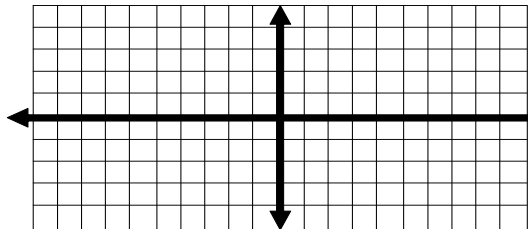
2.  $\frac{x^2}{36} + \frac{y^2}{16} = 1$



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



4.  $\frac{x^2}{4} + \frac{y^2}{25} = 1$



What do the graphs have in common?

How do you know how far out on the x-axis to go?

How do you know how far out on the y-axis to go?

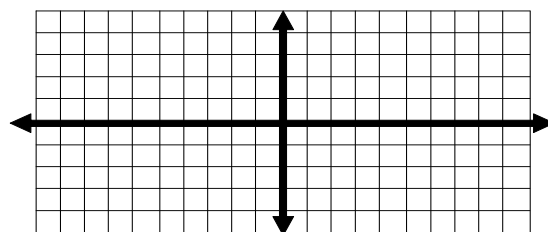
The standard form of the Ellipse is:  $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$  centered at (h,k)

Rewrite these equations into standard form and graph. Then state the **vertices, co-vertices** of the ellipse. The vertices are the endpoints of the longer (major) axis of the ellipse. The co-vertices are the endpoints of the shorter (minor) axis of the ellipse.

1.  $x^2 + 25y^2 = 100$

Vertices:

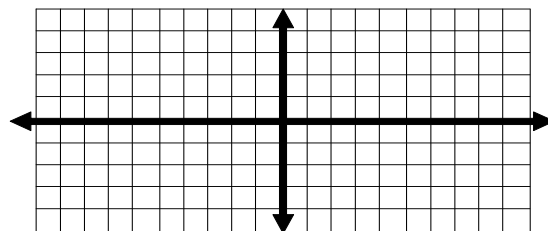
Co-vertices:



2.  $5x^2 + y^2 = 25$

Vertices:

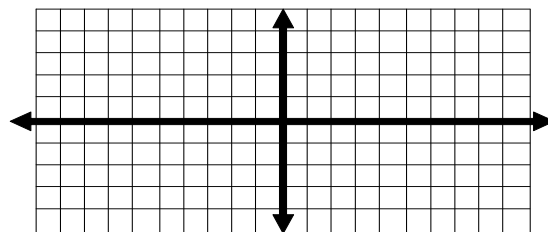
Co-vertices:



3.  $9x^2 + 25y^2 = 225$

Vertices:

Co-vertices:



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

First find the center, then graph

Center:

Vertices:

Co-vertices:

