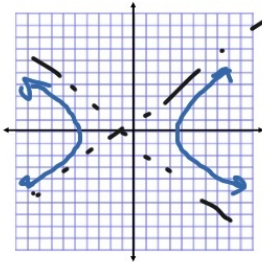


Hyperbolas

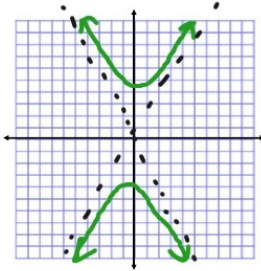
centered @
✓ (0,0) →

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$



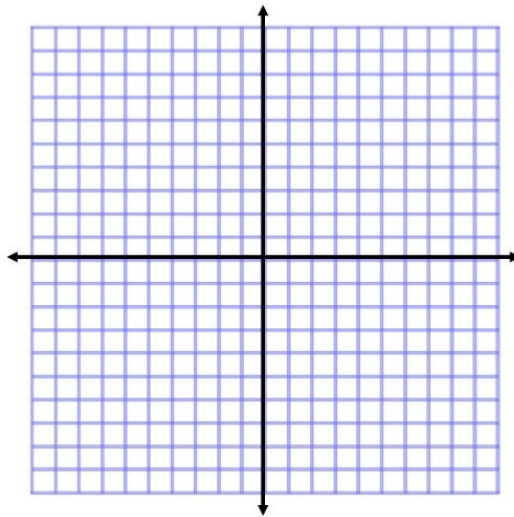
If $\frac{x^2}{a^2}$ comes first,
it opens sideways

$$\frac{y^2}{b^2} - \frac{x^2}{a^2} = 1$$



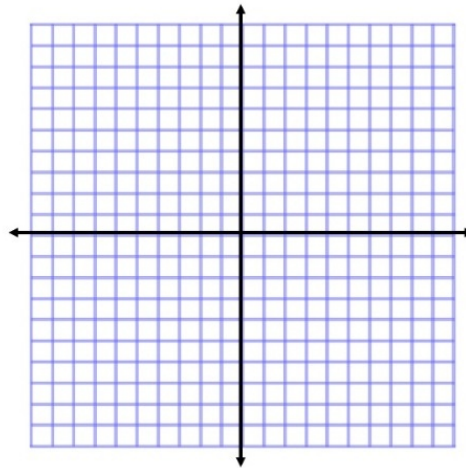
If $\frac{y^2}{b^2}$ comes first
it opens vertically

Ex 1 graph $\frac{y^2}{4} - \frac{x^2}{9} = 1$



Ex 2

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



7-40

Find the center (plot it)

Find a and b, plot from new axes

Draw a, b box and asymptotes

Find a point from the hyperbola on new x-axis or new y axis.

Draw hyperbola (and celebrate your success)

a and b follow the variable they appear under

make a T chart
x/y, you plug in x, or y, it depends

