

4.

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

RIGHT

$$\begin{array}{c} k=0 \\ \frac{(y-0)^2}{(3)^2} - \frac{(x-0)^2}{(2)^2} = 1 \\ \downarrow \quad \downarrow \\ a=3 \quad b=2 \end{array}$$

$h=0$

$$b^2 = c^2 - a^2$$

$$2^2 = c^2 - 3^2$$

$$4 = c^2 - 9$$

$$4 + 9 = c^2$$

$$13 = c^2$$

$$c = \sqrt{13}$$

$$\underline{a=3 \quad b=2 \quad c=\sqrt{13} \quad h=0 \quad k=0}$$

CENTER: (h, k)
 $(0, 0)$

TRANSVERSE AXIS: $y=0$

FOCI: $(h, k+c)$ $(h, k-c)$

$(0, 0 + \sqrt{13})$ $(0, 0 - \sqrt{13})$

$(0, \sqrt{13})$ $(0, -\sqrt{13})$

VERTICES: $(h, k+a)$ $(h, k-a)$

$(0, 0+3)$ $(0, 0-3)$

$(0, 3)$ $(0, -3)$

ASYMPTOTES: $y-k = \pm \frac{a}{b}(x-h)$

$$y-0 = \pm \frac{3}{2}(x-0)$$

$$y = \pm \frac{3}{2}x$$

