

TALLER DE LA ELIPSE

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2020

Ejercicio #5

DD MM AA

$$\frac{x^2}{25} + \frac{y^2}{9} = 1 \rightarrow \text{Ecuación Horizontal}$$

$$a^2 = 25 \rightarrow a = 5$$

$$b^2 = 9 \rightarrow b = 3$$

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

$$c = \pm \sqrt{a^2 - b^2}$$

$$c = \pm \sqrt{25 - 9}$$

$$c = \pm \sqrt{16} \rightarrow \boxed{c = \pm 4}$$

Vertice a

$$(-5, 0) \text{ y } (5, 0)$$

Vertice b

$$(0, -3) \text{ y } (0, 3)$$

Foco c

$$F_1 (-4, 0)$$

$$F_2 (4, 0)$$

Excentricidad $e = \frac{c}{a}$

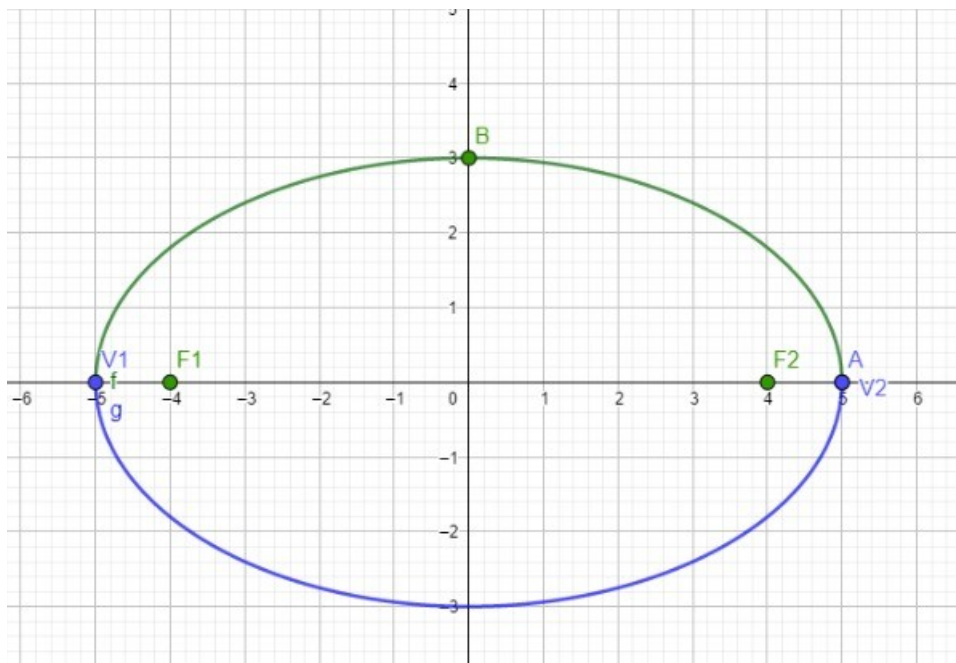
$$e = \frac{4}{5}$$

$$\boxed{e = 0.8}$$

$$\text{Eje mayor} \rightarrow 2a \rightarrow 2(5) = 10$$

$$\text{Eje menor} \rightarrow 2b \rightarrow 2(3) = 6$$

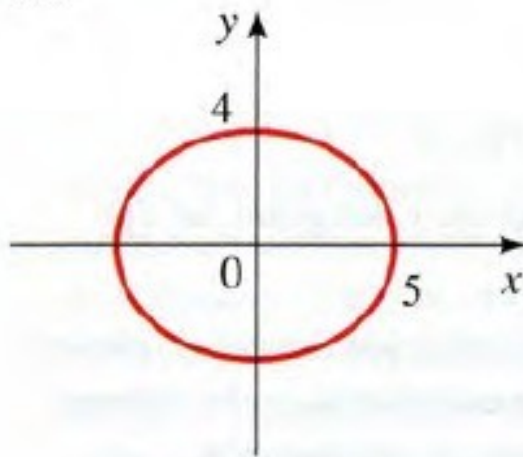
$$\text{Grafica } y = \sqrt{\left(1 - \frac{x^2}{25}\right)} \cdot \sqrt{9}$$



Ejercicio #19

Gráfica

19.



• Ecuación Horizontal

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

$$a = 5 \rightarrow a^2 = 25$$

$$b = 4 \rightarrow b^2 = 16$$

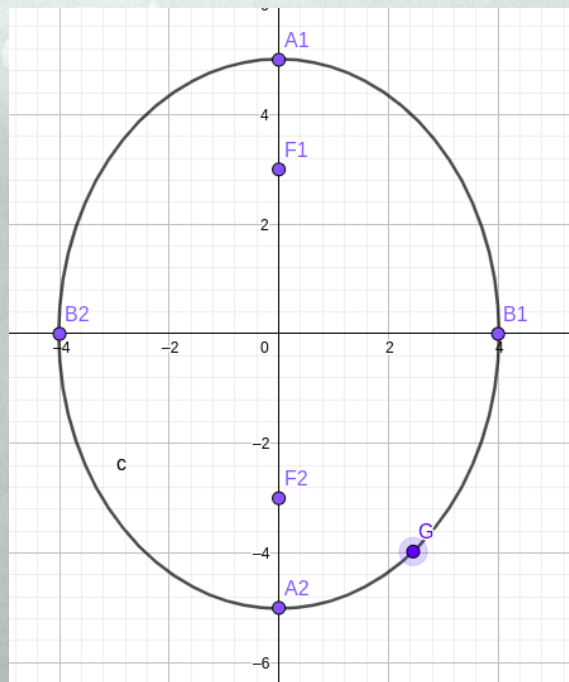
$$\rightarrow \frac{x^2}{25} + \frac{y^2}{16} = 1$$

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

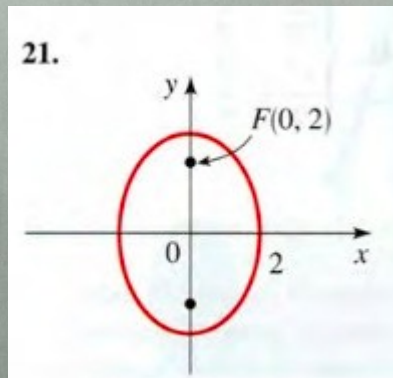
Ejes: $\begin{cases} a \rightarrow 5 \\ b \rightarrow 4 \end{cases}$, focos = $(0, \pm c)$ $\begin{cases} f_1 \rightarrow (0, 3) \\ f_2 \rightarrow (0, -3) \end{cases}$, excentricidad = $e = \frac{c}{a}$
 $\hookrightarrow e = \frac{3}{5} \rightarrow 0.6$

$$c = \pm \sqrt{a^2 - b^2} = \sqrt{25 - 16} = \sqrt{9} = 3 //$$

\hookrightarrow Gráfica



(21). Gráfica:



focos = $(0, 2) \rightarrow c = 2$

$$b = 2$$

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

$$2^2 = a^2 - 2^2$$

$$\sqrt{8} = a$$

Ecuación $\rightarrow \frac{x^2}{b^2} + \frac{y^2}{a^2} = 1$
 $= \frac{x^2}{4} + \frac{y^2}{8} = 1 //$