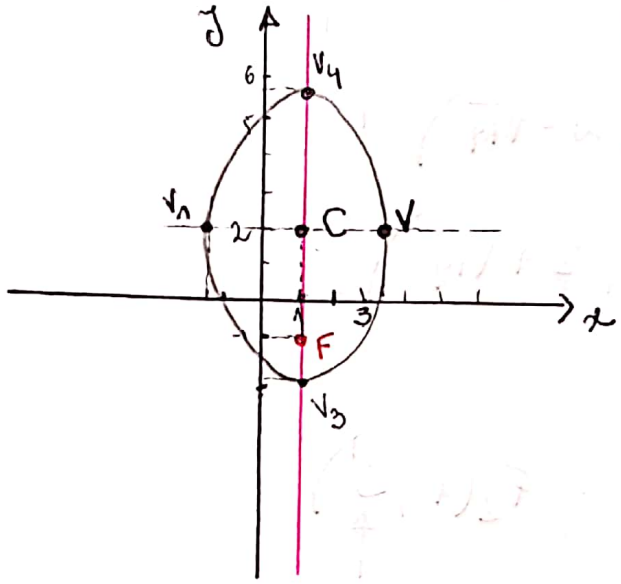
10 d) $C(\overset{x_0}{1}, \overset{y_0}{2})$ centro

$V(1+\sqrt{5}, 2)$ vértice

$F(1, -1)$ foco.



Notemos:

- eje focal $\parallel$ eje y, entonces la ecuación de la elipse es:

$$\frac{(x-x_0)^2}{b^2} + \frac{(y-y_0)^2}{a^2} = 1$$

$(a > b)$

$C(1,2)$ centro $\Rightarrow \frac{(x-1)^2}{b^2} + \frac{(y-2)^2}{a^2} = 1$ a? , b?

- $c = d(C,F) = |\vec{CF}| = \sqrt{0^2+(-3)^2} = \boxed{3}$
- $b^2 = a^2 - c^2$ (? ?)
- $V(x_0+b, y_0) = (1+\sqrt{5}, 2) \Rightarrow \begin{cases} \overset{=1}{x_0}+b = 1+\sqrt{5} \\ y_0 = 2 \end{cases} \Rightarrow \boxed{b = \sqrt{5}}$
- Luego $a^2 = b^2 + c^2 = 5 + 9 = \boxed{14}$

$$\therefore \frac{(x-1)^2}{5} + \frac{(y-2)^2}{14} = 1$$

Ecuación de la Elipse

Vértices:

$V_1(x_0 - b, y_0) \Rightarrow V_1(1-\sqrt{5}, 2)$

$V_2(x_0 + b, y_0) \Rightarrow V_2(1+\sqrt{5}, 2)$

$V_3(x_0, y_0 - a) \Rightarrow V_3(1, 2-\sqrt{14})$

$V_4(x_0, y_0 + a) \Rightarrow V_4(1, 2+\sqrt{14})$

Focos $F_1(1, -1)$, $F_2(1, 5)$

$2+c$