

EJERCICIO MIBE3407:

"achimagrec.com"

$$4^{x+1} + 2^{x+3} - 320 = 0$$

$$4^x \cdot 4 + 2^x \cdot 2^3 - 320 = 0$$

$$(2^2)^x \cdot 4 + 2^x \cdot 2^3 - 320 = 0$$

$$(2^x)^2 \cdot 4 + 2^x \cdot 2^3 - 320 = 0$$

$$2^x = y$$

$$4y^2 + 8y - 320 = 0$$

$$y^2 + 2y - 80 = 0$$

$$y = \frac{-2 \pm \sqrt{2^2 - 4 \cdot 1 \cdot (-80)}}{2} = \frac{-2 \pm \sqrt{324}}{2} = \frac{-2 \pm 18}{2}$$

$$y_1 = \frac{16}{2} = 8 \Rightarrow 2^x = 8 \Rightarrow \boxed{x=3}$$

$$y_2 = -10 \Rightarrow 2^x = -10 \Rightarrow \text{No Solución}$$