

3) RESOLVER EN IR

3.1) $\frac{2^{3x+4}}{16^{x^2+1}} = 1 \Rightarrow \frac{2^{3x+4}}{(2^4)^{x^2+1}} = 1$

$\Rightarrow \frac{2^{3x+4}}{2^{4x^2+4}} = 1 \Rightarrow 2^{3x+4} = 1 \cdot 2^{4x^2+4}$

$\Rightarrow 2^{3x+4} = 2^{4x^2+4} \Leftrightarrow 3x+4 = 4x^2+4$

$\Rightarrow -4x^2 + 3x = 0$ $a = -4$ $b = 3$

$\Rightarrow \frac{-(-3) \pm \sqrt{(-3)^2 - 4 \cdot (-4) \cdot 0}}{2 \cdot (-4)}$ $c = 0$

$\Rightarrow \frac{-3 \pm 3}{-8} \Rightarrow x_1 = \frac{-3+3}{-8} = 0$

$\Rightarrow x_2 = \frac{-3-3}{-8} = \frac{6}{8} = \frac{3}{4}$

$S = \{0, \frac{3}{4}\}$

COMPROBACIONES

CASO $\{0\}$

- $-4 \cdot (0)^2 + 3 \cdot (0) = 0 \Rightarrow 0 = 0 \checkmark$
- $\frac{2^{3 \cdot 0 + 4}}{16^{0^2 + 1}} = 1 \Rightarrow \frac{2^4}{16^1} = 1 \Rightarrow \frac{16^1}{16^1} = 1 \Rightarrow 1 = 1 \checkmark$

CASO $\{\frac{3}{4}\}$

- $-4 \cdot (\frac{3}{4})^2 + 3 \cdot (\frac{3}{4}) = 0$

$\Rightarrow -4 \cdot (\frac{9}{16}) + \frac{9}{4} = 0 \Rightarrow \frac{-9}{4} + \frac{9}{4} = 0 \checkmark$

$\frac{3}{4} + 4 = \frac{9+16}{4} = \frac{25}{4}$

$\frac{3}{16} + 1 = \frac{9+16}{16} = \frac{25}{16}$

$\frac{2^{3(\frac{3}{4})+4}}{16^{(\frac{3}{4})^2+1}} = 1 \Rightarrow \frac{2^{\frac{25}{4}}}{16^{\frac{25}{16}}} = 1$

$\Rightarrow \frac{2^{\frac{25}{4}}}{2^{\frac{25}{4}}} = 1 \Rightarrow 1 = 1 \checkmark$