

EJERCICIO MIB53417:

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Resolva la ecuación:

$$6^x - 9 \cdot 6^{-x} + 8 = 0$$

$$6^x - \frac{9}{6^x} + 8 = 0$$

Cambio de Variable:
 $6^x = a$

$$a - \frac{9}{a} + 8 = 0$$

$$\frac{a^2 - 9 + 8a}{a} = 0$$

$$a^2 + 8a - 9 = 0$$

$$a = \frac{-8 \pm \sqrt{8^2 - 4 \cdot 1 \cdot (-9)}}{2} = \frac{-8 \pm \sqrt{100}}{2}$$

$$a_1 = \frac{-8 + 10}{2} = \frac{2}{2} = 1$$

$$a_2 = \frac{-8 - 10}{2} = \frac{-18}{2} = -9$$

$$\boxed{a=1} \Rightarrow 6^x = 1 \Rightarrow \boxed{x=0}$$

$$a=-9 \Rightarrow 6^x = -9 \Rightarrow \text{No Solución}$$