$$3^x + \frac{1}{3^x} - \frac{1}{3} = \frac{79}{9}$$

CAMBIO DE VARIABLE: $3^x = a$

$$a + \frac{1}{a} - \frac{1}{3} = \frac{79}{9}$$

$$mcm(a, 3, 9) = 3^2 \cdot a = 9a$$

$a = a$

$3 = 3$

$9 = 3^2$

$$\frac{9a^2}{9a} + \frac{9}{9a} - \frac{3a}{9a} = \frac{79a}{9a}$$

$$9a^2 - 82a + 9 = 0$$

$$a = \frac{-(-82) \pm \sqrt{(-82)^2 - 4 \cdot 9 \cdot 9}}{2 \cdot 9} = \frac{82 \pm \sqrt{6400}}{18} =$$

$$= \frac{82 \pm 80}{18} = \begin{cases} \frac{162}{18} = 9 \\ \frac{2}{18} = \frac{1}{9} \end{cases}$$

DESHACER EL CAMBIO DE VARIABLE:

$$3^x = a = 9 = 3^2 \longrightarrow x = 2$$

$$3^x = a = \frac{1}{9} = 3^{-2} \longrightarrow x = -2$$

COMPROBAR: $3^x + \frac{1}{3^x} - \frac{1}{3} = \frac{79}{9}$

$X=2$ ✓

$$3^2 + \frac{1}{3^2} - \frac{1}{3} = 9 + \frac{1}{9} - \frac{1}{3} = \frac{81+1-3}{9} = \frac{79}{9}$$

$X=-2$ ✓

$$3^{-2} + \frac{1}{3^{-2}} - \frac{1}{3} = \frac{1}{9} + 9 - \frac{1}{3} = \frac{1+81-3}{9} = \frac{79}{9}$$

$X=2$ y $X=-2$ SON SOLUCIONES DE LA ECUACIÓN