

1077. Rešiti jednačinu: $4^x = 2^{\frac{x+1}{x}}$.

$$\begin{aligned}4^x &= 2^{\frac{x+1}{x}} \\(2^2)^x &= 2^{\frac{x+1}{x}} \\2^{2x} &= 2^{\frac{x+1}{x}}, \quad x \neq 0\end{aligned}$$

$$\begin{aligned}2x &= \frac{x+1}{x} \\2x^2 &= x+1 \\2x^2 - x - 1 &= 0\end{aligned}$$

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x_{1,2} = \frac{1 \pm \sqrt{1^2 - 4 \cdot 2 \cdot (-1)}}{2 \cdot 2}$$

$$x_{1,2} = \frac{1 \pm \sqrt{1+8}}{4}$$

$$x_{1,2} = \frac{1 \pm \sqrt{9}}{4}$$

$$\begin{aligned}x_{1,2} &= \frac{1 \pm 3}{4} \\x_1 &= 1 \quad x_2 = -\frac{1}{2}\end{aligned}$$