

521. Rješenje jednadžbe $\left(\frac{3}{7}\right)^{1-x} \left(\frac{7}{3}\right)^{-\frac{2}{x}} = \frac{9}{49}$ pripadaju skupu ·

1. $\{-1, -3\}$ 2. $\{-2, 1\}$ 3. $\{0, 2\}$ 4. nema rješenja

$$\left(\frac{3}{7}\right)^{1-x} \left(\frac{7}{3}\right)^{-\frac{2}{x}} = \frac{9}{49}$$

$$\left(\frac{3}{7}\right)^{1-x} \left(\left(\frac{3}{7}\right)^{-1}\right)^{-\frac{2}{x}} = \frac{4}{49}$$

$$\left(\frac{3}{7}\right)^{1-x} \left(\frac{3}{7}\right)^{\frac{2}{x}} = \frac{9}{49}$$

$$\left(\frac{3}{7}\right)^{1-x+\frac{2}{x}} = \frac{9}{49}$$

$$\left(\frac{3}{7}\right)^{\frac{x-x^2+2}{x}} = \frac{3^2}{7^2}$$

$$\left(\frac{3}{7}\right)^{\frac{-x^2+x+2}{x}} = \left(\frac{3}{7}\right)^2$$

$$\frac{-x^2+x+2}{x} = 2 \quad / \cdot x, \quad x \neq 0$$

$$-x^2+x+2 = 2x$$

$$-x^2+x+2-2x = 0$$

$$-x^2-x+2 = 0 \quad /: (-1)$$

$$x^2+x-2 = 0$$

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

$$x_{1/2} = \frac{-1 \pm \sqrt{1^2 - 4 \cdot 1 \cdot (-2)}}{2 \cdot 1} = \frac{-1 \pm \sqrt{1+8}}{2} = \frac{-1 \pm \sqrt{9}}{2} = \frac{-1 \pm 3}{2}$$

$$x_1 = \frac{-1+3}{2} = \frac{2}{2} = 1 \quad \text{i} \quad x_2 = \frac{-1-3}{2} = -\frac{4}{2} = -2$$

$$x_1 = 1$$

$$x_2 = -2$$

Rješenje jednadžbe je skup $\{-2, 1\}$