

$$0,4^{\log^2 x+1} = 6,25^{2-\log x^3}; \quad 0,4 = \frac{2}{5} = \left(\frac{5}{2}\right)^{-1} = 2,5^{-1}; \quad 6,25 = 2,5^2$$

$$2,5^{-1 \cdot (\log^2 x+1)} = 2,5^{2 \cdot (2-\log x^3)}$$

$$-\log^2 x - 1 = 4 - 2 \log x^3; \quad 2 \log x^3 = 3 \cdot 2 \log x = 6 \log x$$

$$\log^2 x - 6 \log x + 5 = 0; \quad \text{substituce: } \log x = a$$

$$a^2 - 6a + 5 = 0$$

$$(a - 5)(a - 1) = 0$$

$$a_1 = 5; \quad a_2 = 1$$

$$\log x = 5 \quad \vee \quad \log x = 1$$

$$x_1 = 10; \quad x_2 = 10^5$$