

273. Rješenje logaritamske jednadžbe $\log(x+3) + \log(x-2) = 2\log(x-1)$ je realan broj:

1. $3/7$ 2. $7/3$ 3. 3 4. 7

$$\log(x+3) + \log(x-2) = 2\log(x-1)$$

$$\log((x+3) \cdot (x-2)) = \log(x-1)^2$$

$$(x+3) \cdot (x-2) = (x-1)^2$$

$$x^2 - 2x + 3x - 6 = x^2 - 2x + 1$$

$$x^2 - x^2 - 2x + 3x + 2x = 6 + 1$$

$$3x = 7$$

$$x = \frac{7}{3}$$

ali treba obratiti pažnju i na uvjet:

$$\log(x+3) + \log(x-2) = 2\log(x-1)$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ \text{uvjet: } & x+3 > 0 & x-2 > 0 & x-1 > 0 \\ & x > -3 & x > 2 & x > 1 \end{array}$$

$$\underbrace{\hspace{10em}}_{\downarrow}$$

$$x > 2$$

$x = \frac{7}{3}$, uvjet kaže da mora biti: $x > 2$ pa je to valjano rješenje...