

Zadatak 30. Ako je $f(x) = \log_3 x - 2 \log_9 \frac{3}{x}$, koliko je $f(x) + f\left(\frac{1}{x}\right)$?

Rješenje.

$$\begin{aligned} f(x) &= \log_3 x - 2 \log_9 \frac{3}{x} = \log_3 x - 2 \cdot \frac{1}{2} \log_3 \frac{3}{x} \\ &= \log_3 x - \log_3 3 + \log_3 x = 2 \log_3 x - 1; \\ f(x) + f\left(\frac{1}{x}\right) &= 2 \log_3 x - 1 + 2 \log_3 \frac{1}{x} - 1 \\ &= 2 \log_3 x - 2 \log_3 x - 2 = -2. \end{aligned}$$