

Урок 2, задание 4

$$1) \log_4 16 = \log_4 4^2 = 2$$

$$2) \log_5 \frac{1}{25} = \log_5 5^{-2} = -2$$

$$3) \log_5 25 = \log_5 5^2 = 2 \quad \text{и} \quad \log_{25} 5 = \frac{1}{2} \log_5 5 = \frac{1}{2}$$

$$4) \log_3 \sqrt[3]{27} = \log_3 (27)^{\frac{1}{3}} = \log_3 (3^3)^{\frac{1}{3}} = \log_3 3^{\frac{3}{3}} = \frac{3}{3}$$

$$5) \log_2 12 - \log_2 3 = \log_2 \frac{12}{3} = \log_2 4 = \log_2 2^2 = 2$$

$$6) \log_6 12 + \log_6 3 = \log_6 36 = \log_6 6^2 = 2$$

$$7) e^{\ln 5} = e^{\log_e 5} = 5$$

$$8) \frac{\log_2 225}{\log_2 15} = \log_{15} 225 = \log_{15} 15^2 = 2$$

$$9) \log_4 32 + \log_{0.1} 10 = \frac{1}{2} \log_2 2^5 + (-1) \log_{10} 10 = \frac{5}{2} - 1 = \frac{3}{2}$$

$$10) \log_3 \sqrt[3]{5} =$$

$$(3^{-2}) \log_3 \sqrt[3]{5} = 3 \log_3 \sqrt[3]{5}^2 = \sqrt[3]{5}^2 = 5$$