

$$\star \log_2 b = \textcircled{1}^{\text{exp}}$$

$$2^1 = b$$

$$b = 2$$

$$\star \log_a 16 = 2^{\text{exp.}}$$

$$a^2 = 16$$

$$a = 4$$

Proprietăți ale logaritmului

$$1) \log(A \cdot B) = \log A + \log B$$

Exemplu

$$\log(2 \cdot 7) \stackrel{?}{=} \log 2 + \log 7$$

$$\log 2 + \log 7 \stackrel{?}{=} \log(2 \cdot 7)$$

$$\star \log\left(\frac{A}{B}\right) = \log A - \log B$$

$$\log A - \log B = \log\left(\frac{A}{B}\right)$$

$$\log\left(\frac{25}{4}\right) = \log 25 - \log 4$$

$$\star \log A^B = B \log A$$

$$\log 5^2 = \log 2^2$$

$$2 \log 5 = 2 \log 2$$

$$\log \sqrt[3]{5^2}$$

$$\log 5^{\frac{2}{3}} \rightarrow \frac{2}{3} \log 5$$

$$\star \log(4 \cdot \sqrt{2}) =$$

$$\log 4 + \log \sqrt{2}$$

$$\log 2^2 + \log 2$$

$$2 \log 2 + \frac{1}{2} \log 2$$

$$\star \log_5(3ab^2)$$

$$\log_5 3 + \log_5 a + \log_5 b^2$$

$$\log_5 3 + \log_5 a + 2 \log_5 b$$

$$\log_3 \frac{a^2 \sqrt{b}}{9 \sqrt[3]{ab}}$$

$$\log_3 a^2 \sqrt{b} - \log_3 9 \sqrt[3]{ab}$$

$$\log_3 a^2 + \log_3 \sqrt{b} - [\log_3 9 + \log_3 \sqrt[3]{ab}] (ab)^{\frac{1}{3}}$$

$$2 \log_3 a + \frac{1}{2} \log_3 b - 2 - \frac{1}{3} \log_3 a - \frac{1}{3} \log_3 b$$

$$\left(2 - \frac{1}{3}\right) \log_3 a + \left(\frac{1}{2} - \frac{1}{3}\right) \log_3 b - 2$$

$$\left(\frac{6-1}{3}\right) \log_3 a + \left(\frac{3-2}{6}\right) \log_3 b - 2$$

$$\frac{5}{3} \log_3 a + \frac{1}{6} \log_3 b - 2$$

$$\textcircled{91} \log \sqrt{a \sqrt[3]{ab^2}}$$

$$\log \sqrt[3]{a^3 \cdot ab^2}$$

$$\log \sqrt[6]{a^4 b^2}$$

$$\log \sqrt[6]{a^4 b^2}$$

$$\log (a^4 b^2)^{\frac{1}{6}}$$

$$\frac{1}{6} [\log a^4 b^2]$$

$$\frac{1}{6} [\log a^4 + \log b^2]$$

$$\frac{1}{6} [4 \log a + 2 \log b]$$

$$\frac{4}{6} \log a + \frac{2}{6} \log b$$

$$\frac{2}{3} \log a + \frac{1}{3} \log b$$