

指数
対数

1-1

次の計算をせよ。

(1) $3^4 \times 3^{-2}$

(3) $(a^2 b^5)^3$

(5) $\sqrt{3} \times \sqrt[3]{3} \times \sqrt[6]{3}$

(7) $\log_3 7 - \log_3 21$

(2) $\left(\left(\frac{1}{4}\right)^{\frac{1}{3}}\right)^{\frac{3}{2}}$

(4) $4\sqrt[5]{7} + 5\sqrt[5]{7}$

(6) $\log_{10} 2 + \log_{10} 5$

(8) $\frac{1}{2} \log_4 8 + \log_4 \sqrt{2}$

(1) $3^{4-2} = 3^2 = 9$

(2) $\left(\frac{1}{4}\right)^{\frac{1}{3} \cdot \frac{3}{2}} = \left(\frac{1}{4}\right)^{\frac{1}{2}} = \sqrt{\frac{1}{4}} = \frac{1}{2}$

(3) $a^6 b^{15}$

(4) $9\sqrt[5]{7}$

(5) $3^{\frac{1}{2}} \times 3^{\frac{1}{3}} \times 3^{\frac{1}{6}} = 3^{\frac{1}{2} + \frac{1}{3} + \frac{1}{6}} = 3^1 = 3$

(6) $\log_{10} 2.5 = \log_{10} 10 = 1$

(7) $\log_3 \frac{7}{21} = \log_3 \frac{1}{3} = \log_3 3^{-1} = -1$

(8) $\log_4 \sqrt{8} \cdot \sqrt{2} = \log_4 \sqrt{16}$
 $= \log_4 4$
 $= 1$