



基本問題を確認しよう

数Ⅱ

指数の拡張 (解答)

① (1) $7^0 = 1$

(2) $2^{-4} = \frac{1}{2^4} = \frac{1}{16}$

(3) $81^{\frac{1}{2}} = \sqrt{81} = 9$

(4) $27^{-\frac{2}{3}} = \frac{1}{27^{\frac{2}{3}}} = \frac{1}{(\sqrt[3]{27})^2} = \frac{1}{3^2} = \frac{1}{9}$

② (1) $a^{-2}a^7 \div a^4 = a^{-2+7-4} = a^1 = a$

(2) $2^{\frac{2}{3}} \times 2^{\frac{3}{4}} \div 2^{\frac{5}{12}} = 2^{\frac{2}{3}+\frac{3}{4}-\frac{5}{12}} = 2^1 = 2$

③ (1) $\sqrt[3]{5}\sqrt[3]{25} = 5^{\frac{1}{3}}25^{\frac{1}{3}} = 5^{\frac{1}{3}}(5^2)^{\frac{1}{3}} = 5^{\frac{1}{3}}5^{\frac{2}{3}} = 5^{\frac{1}{3}+\frac{2}{3}} = 5^1 = 5$

(2) $\sqrt[3]{12} \times \sqrt{2} \div \sqrt[6]{18} = 12^{\frac{1}{3}} \times 2^{\frac{1}{2}} \div 18^{\frac{1}{6}} = (3 \cdot 2^2)^{\frac{1}{3}} \times 2^{\frac{1}{2}} \div (3^2 \cdot 2)^{\frac{1}{6}}$
 $= 3^{\frac{1}{3}} \cdot 2^{\frac{2}{3}} \cdot 2^{\frac{1}{2}} \div (3^{\frac{1}{3}} \cdot 2^{\frac{1}{6}}) = 3^{\frac{1}{3}-\frac{1}{3}} \cdot 2^{\frac{2}{3}+\frac{1}{2}-\frac{1}{6}} = 3^0 \cdot 2^1 = 2$