

指数法則

$$\star^{\circ} \times \star^{\triangle} = \star^{\circ+\triangle}$$

$$\begin{aligned} 3^{\frac{5}{2}} \times 3^{\frac{3}{2}} &= 3^{\frac{5}{2} + \frac{3}{2}} \\ &= 3^{\frac{8}{2}} \\ &= 3^4 \\ &= 81 \end{aligned}$$

答

$$\star^{\circ} \div \star^{\triangle} = \star^{\circ - \triangle}$$

$$\begin{aligned} 2^{\frac{9}{2}} \div 2^{\frac{5}{2}} &= 2^{\frac{9}{2} - \frac{5}{2}} \\ &= 2^{\frac{4}{2}} \\ &= 2^2 \\ &= 4 \quad \boxed{\text{答}} \end{aligned}$$

$$\sqrt[\text{■}]{\text{★}\text{◆}} = \text{★}\frac{\text{◆}}{\text{■}}$$

$$(\text{★}\text{●})^{\text{▲}} = \text{★}\text{●}\times\text{▲}$$

$$\begin{aligned}(\sqrt[3]{5^2})^6 &= (5^{\frac{2}{3}})^6 \\ &= 5^{\frac{2}{3}\times 6} \\ &= 5^4 \\ &= 625 \quad \boxed{\text{答}}\end{aligned}$$

$$\sqrt[\color{purple}{\square}]{\color{green}{\star}\color{orange}{\diamond}} = \color{green}{\star}\color{purple}{\frac{\diamond}{\square}}$$

$$\color{green}{\star}\color{orange}{\circ} \times \color{green}{\star}\color{blue}{\triangle} = \color{green}{\star}\color{orange}{\circ} + \color{blue}{\triangle}$$

$$\begin{aligned}\sqrt[6]{5^4} \times \sqrt[3]{5^4} &= 5^{\frac{4}{6}} \times 5^{\frac{4}{3}} \\ &= 5^{\frac{2}{3}} \times 5^{\frac{4}{3}} \\ &= 5^{\frac{2}{3} + \frac{4}{3}} = 5^{\frac{6}{3}} \\ &= 5^2 = 25 \quad \boxed{\text{答}}\end{aligned}$$

$$\sqrt{\text{★} \text{◆}} = \text{★} \frac{\text{◆}}{\text{■}}$$

$$\begin{aligned} \sqrt{5^3} \div \sqrt[6]{125} &= \sqrt{5^3} \div \sqrt[6]{5^3} \\ \sqrt{5^3} &= \sqrt[2]{5^3} \quad \text{2 が省略されてる} \\ &= \sqrt[2]{5^3} \div \sqrt[6]{5^3} \\ &= 5^{\frac{3}{2}} \div 5^{\frac{3}{6}} \\ &= 5^{\frac{3}{2}} \div 5^{\frac{1}{2}} \end{aligned}$$

$$\star^{\bullet} \div \star^{\blacktriangle} = \star^{\bullet - \blacktriangle}$$

$$= 5^{\frac{3}{2}} \div 5^{\frac{1}{2}}$$

$$= 5^{\frac{3}{2} - \frac{1}{2}}$$

$$= 5^{\frac{2}{2}} = 5^1 = 5 \quad \boxed{\text{答}}$$