

平方根 分母の有理化 練習

NO. 1

名前

/ 点

1 次の数を、分母が $\sqrt{\quad}$ をふくまない形に変形しなさい。

① $\frac{2}{\sqrt{7}}$

② $\frac{5}{\sqrt{3}}$

③ $\frac{3}{2\sqrt{5}}$

④ $\frac{2}{7\sqrt{3}}$

⑤ $\frac{\sqrt{3}}{\sqrt{7}}$

⑥ $\frac{2\sqrt{3}}{3\sqrt{2}}$

2 次の数を、分母が $\sqrt{\quad}$ をふくまない形に変形しなさい。

① $\frac{3}{\sqrt{12}}$

② $\frac{5}{\sqrt{45}}$

③ $\frac{\sqrt{2} + 1}{\sqrt{3}}$

④ $\frac{\sqrt{6} + \sqrt{3}}{\sqrt{2}}$

解答

1

$$\begin{aligned} \textcircled{1} \quad \frac{2}{\sqrt{7}} &= \frac{2 \times \sqrt{7}}{\sqrt{7} \times \sqrt{7}} \\ &= \frac{2\sqrt{7}}{7} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{5}{\sqrt{3}} &= \frac{5 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} \\ &= \frac{5\sqrt{3}}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \frac{3}{2\sqrt{5}} &= \frac{3 \times \sqrt{5}}{2\sqrt{5} \times \sqrt{5}} \\ &= \frac{3\sqrt{5}}{10} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \frac{2}{7\sqrt{3}} &= \frac{2 \times \sqrt{3}}{7\sqrt{3} \times \sqrt{3}} \\ &= \frac{2\sqrt{3}}{21} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \frac{\sqrt{3}}{\sqrt{7}} &= \frac{\sqrt{3} \times \sqrt{7}}{\sqrt{7} \times \sqrt{7}} \\ &= \frac{\sqrt{21}}{7} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \frac{2\sqrt{3}}{3\sqrt{2}} &= \frac{2\sqrt{3} \times \sqrt{2}}{3\sqrt{2} \times \sqrt{2}} \\ &= \frac{2\sqrt{6}}{6} \\ &= \frac{\sqrt{6}}{3} \end{aligned}$$

2

$$\textcircled{1} \quad \frac{3}{\sqrt{12}} = \frac{3}{2\sqrt{3}} = \frac{3 \times \sqrt{3}}{2\sqrt{3} \times \sqrt{3}} = \frac{3\sqrt{3}}{6} = \frac{\sqrt{3}}{2}$$

$$\textcircled{2} \quad \frac{5}{\sqrt{45}} = \frac{5}{3\sqrt{5}} = \frac{5 \times \sqrt{5}}{3\sqrt{5} \times \sqrt{5}} = \frac{5\sqrt{5}}{15} = \frac{\sqrt{5}}{3}$$

$$\textcircled{3} \quad \frac{\sqrt{2} + 1}{\sqrt{3}} = \frac{\sqrt{3}(\sqrt{2} + 1)}{\sqrt{3} \times \sqrt{3}} = \frac{\sqrt{6} + \sqrt{3}}{3}$$

$$\begin{aligned} \textcircled{4} \quad \frac{\sqrt{6} + \sqrt{3}}{\sqrt{2}} &= \frac{\sqrt{2}(\sqrt{6} + \sqrt{3})}{\sqrt{2} \times \sqrt{2}} = \frac{\sqrt{12} + \sqrt{6}}{2} \\ &= \frac{2\sqrt{3} + \sqrt{6}}{2} \end{aligned}$$