

# 平方根（有理化）

組 番 名前

1 次の数の分母を有理化しなさい。

$$\begin{aligned} \textcircled{1} \quad \frac{1}{\sqrt{3}} &= \frac{1 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} \\ &= \frac{\sqrt{3}}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{\sqrt{7}}{\sqrt{5}} &= \frac{\sqrt{7} \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} \\ &= \frac{\sqrt{35}}{5} \end{aligned}$$

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

$$\begin{aligned} \textcircled{4} \quad \frac{9}{\sqrt{63}} &= \frac{9 \times \sqrt{7}}{3\sqrt{7} \times \sqrt{7}} \\ &= \frac{3\sqrt{7}}{7} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \frac{8\sqrt{3}}{\sqrt{2}} &= \frac{8\sqrt{3} \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\ &= \frac{8\sqrt{6}}{2} \\ &= 4\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \frac{9}{\sqrt{18}} &= \frac{9}{3\sqrt{2}} \\ &= \frac{3 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\ &= \frac{3\sqrt{2}}{2} \end{aligned}$$

2 次の計算をしなさい。答えは、分母を有理化して表すこと。

$$\begin{aligned} \textcircled{1} \quad \sqrt{3} \div \sqrt{5} \\ &= \frac{\sqrt{3} \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} \\ &= \frac{\sqrt{15}}{5} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \sqrt{8} \div \sqrt{27} \\ &= \frac{2\sqrt{2} \times \sqrt{3}}{3\sqrt{3} \times \sqrt{3}} \\ &= \frac{2\sqrt{6}}{9} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \sqrt{28} \div \sqrt{21} \\ &= \frac{2 \times \sqrt{7}}{\sqrt{3} \times \sqrt{3}} \\ &= \frac{2\sqrt{7}}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad 15 \div \sqrt{3} \\ &= \frac{15 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} \\ &= \frac{15\sqrt{3}}{3} = 5\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \sqrt{2} \div 7\sqrt{6} \\ &= \frac{1 \times \sqrt{3}}{7\sqrt{3} \times \sqrt{3}} \\ &= \frac{\sqrt{3}}{21} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad 4\sqrt{3} \div \sqrt{32} \\ &= \frac{4\sqrt{3} \times \sqrt{2}}{4\sqrt{2} \times \sqrt{2}} \\ &= \frac{\sqrt{6}}{2} \end{aligned}$$

3  $\sqrt{3} = 1.732$ として、 $\frac{1}{\sqrt{3}}$ のおよその値を、四捨五入して小数第2位まで求めなさい。

$$\begin{aligned} \frac{1 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} &= \frac{\sqrt{3}}{3} = 1.732 \div 3 \\ &= \underline{\underline{0.58}} \end{aligned}$$

4  $\sqrt{2} = 1.414$ ,  $\sqrt{20} = 4.472$  として次の値を求めなさい。

$$\begin{aligned} \textcircled{1} \quad \sqrt{200} \\ &= 10\sqrt{2} \\ &= 10 \times 1.414 \\ &= 14.14 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \sqrt{2000} \\ &= 10\sqrt{20} \\ &= 10 \times 4.472 \\ &= 44.72 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \sqrt{0.2} \\ &= \sqrt{\frac{20}{100}} \\ &= \frac{\sqrt{20}}{10} \\ &= 4.472 \times \frac{1}{10} \\ &= 0.4472 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \sqrt{0.02} \\ &= \sqrt{\frac{2}{100}} \\ &= \frac{\sqrt{2}}{10} \\ &= 1.414 \times \frac{1}{10} \\ &= 0.1414 \end{aligned}$$