

平方根の変形

学習日 月 日

年 組 番 氏名

POINT

$$a > 0, b > 0 \text{ のとき, } a\sqrt{b} = a \times \sqrt{b} = \sqrt{a^2} \times \sqrt{b} = \sqrt{a^2b}$$

(1) 次の にあてはまる数を入れなさい。

$$\begin{aligned} \textcircled{1} \quad & 4\sqrt{3} \\ & = \sqrt{\square} \times \sqrt{3} \\ & = \sqrt{\square} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \frac{\sqrt{10}}{2} \\ & = \frac{\sqrt{10}}{\sqrt{\square}} \\ & = \sqrt{\square} \end{aligned}$$

(2) 次の数を \sqrt{a} の形に変形しなさい。

$$\textcircled{1} \quad 2\sqrt{3}$$

$$\textcircled{2} \quad 5\sqrt{2}$$

$$\textcircled{3} \quad 10\sqrt{3}$$

$$\textcircled{4} \quad \frac{\sqrt{8}}{3}$$

$$\textcircled{5} \quad \frac{\sqrt{6}}{4}$$

$$\textcircled{6} \quad \frac{\sqrt{15}}{6}$$

POINT

$$a > 0, b > 0 \text{ のとき, } \sqrt{a^2b} = \sqrt{a^2} \sqrt{b} = a \times \sqrt{b} = a\sqrt{b}$$

(3) 次の数を $a\sqrt{b}$ の形に変形しなさい。

$$\textcircled{1} \quad \sqrt{8}$$

$$\textcircled{2} \quad \sqrt{12}$$

$$\textcircled{3} \quad \sqrt{20}$$

$$\textcircled{4} \quad \sqrt{24}$$

$$\textcircled{5} \quad \sqrt{50}$$

$$\textcircled{6} \quad \sqrt{72}$$

$$\textcircled{7} \quad \sqrt{300}$$

$$\textcircled{8} \quad \sqrt{5000}$$

$$\textcircled{9} \quad \sqrt{\frac{5}{16}}$$

$$\textcircled{10} \quad \sqrt{\frac{12}{49}}$$

平方根の変形

学習日 月 日

年 組 番 氏名

POINT

$$a > 0, b > 0 \text{ のとき, } a\sqrt{b} = a \times \sqrt{b} = \sqrt{a^2} \times \sqrt{b} = \sqrt{a^2b}$$

(1) 次の にあてはまる数を入れなさい。

$$\begin{aligned} \textcircled{1} \quad 4\sqrt{3} \\ &= \sqrt{\boxed{16}} \times \sqrt{3} \\ &= \sqrt{\boxed{48}} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{\sqrt{10}}{2} \\ &= \frac{\sqrt{10}}{\sqrt{\boxed{4}}} \\ &= \sqrt{\frac{\boxed{5}}{\boxed{2}}} \end{aligned}$$

(2) 次の数を \sqrt{a} の形に変形しなさい。

$$\begin{aligned} \textcircled{1} \quad 2\sqrt{3} \\ &= \sqrt{4} \times \sqrt{3} \\ &= \sqrt{12} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 5\sqrt{2} \\ &= \sqrt{25} \times \sqrt{2} \\ &= \sqrt{50} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad 10\sqrt{3} \\ &= \sqrt{100} \times \sqrt{3} \\ &= \sqrt{300} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \frac{\sqrt{8}}{3} \\ &= \frac{\sqrt{8}}{\sqrt{9}} \\ &= \sqrt{\frac{8}{9}} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \frac{\sqrt{6}}{4} \\ &= \frac{\sqrt{6}}{\sqrt{16}} \\ &= \sqrt{\frac{3}{8}} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \frac{\sqrt{15}}{6} \\ &= \frac{\sqrt{15}}{\sqrt{36}} \\ &= \sqrt{\frac{5}{12}} \end{aligned}$$

POINT

$$a > 0, b > 0 \text{ のとき, } \sqrt{a^2b} = \sqrt{a^2} \sqrt{b} = a \times \sqrt{b} = a\sqrt{b}$$

(3) 次の数を $a\sqrt{b}$ の形に変形しなさい。

$$\begin{aligned} \textcircled{1} \quad \sqrt{8} &= \sqrt{4} \times \sqrt{2} \\ &= 2\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \sqrt{12} &= \sqrt{4} \times \sqrt{3} \\ &= 2\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \sqrt{20} &= \sqrt{4} \times \sqrt{5} \\ &= 2\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \sqrt{24} &= \sqrt{4} \times \sqrt{6} \\ &= 2\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \sqrt{50} &= \sqrt{25} \times \sqrt{2} \\ &= 5\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \sqrt{72} &= \sqrt{36} \times \sqrt{2} \\ &= 6\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad \sqrt{300} &= \sqrt{100} \times \sqrt{3} \\ &= 10\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad \sqrt{5000} &= \sqrt{2500} \times \sqrt{2} \\ &= 50\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad \sqrt{\frac{5}{16}} &= \frac{\sqrt{5}}{\sqrt{16}} \\ &= \frac{\sqrt{5}}{4} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad \sqrt{\frac{12}{49}} &= \frac{\sqrt{4} \times \sqrt{3}}{\sqrt{49}} \\ &= \frac{2\sqrt{3}}{7} \end{aligned}$$