

平方根の乗法・除法

学習日 月 日

年 組 番 氏名

(1) 次の計算をなさい。

① $\sqrt{3} \times \sqrt{32}$

② $\sqrt{27} \times \sqrt{8}$

③ $\sqrt{45} \times 3\sqrt{12}$

④ $2\sqrt{3} \times 3\sqrt{6}$

⑤ $\sqrt{24} \div \sqrt{3}$

⑥ $\sqrt{6} \div \sqrt{27}$

⑦ $4\sqrt{3} \div \sqrt{12}$

⑧ $6\sqrt{10} \div \sqrt{18}$

(2) 次の計算をなさい。

① $\sqrt{2} \times \sqrt{3} \times \sqrt{6}$

② $\sqrt{24} \div \sqrt{3} \times \sqrt{6}$

③ $\sqrt{2} \div \sqrt{3} \times \sqrt{6}$

④ $\sqrt{5} \div \sqrt{10} \times \sqrt{6}$

⑤ $2\sqrt{6} \div \sqrt{8} \times \sqrt{3}$

⑥ $\sqrt{12} \div \sqrt{8} \div \sqrt{6}$

⑦ $\sqrt{14} \times (-2\sqrt{21}) \div 7\sqrt{3}$

⑧ $\sqrt{24} \div 3\sqrt{2} \times (-\sqrt{15})$

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(1) 次の計算をなさい。

$$\begin{aligned} \textcircled{1} \quad & \sqrt{3} \times \sqrt{32} \\ & = \sqrt{3} \times 4\sqrt{2} \\ & = 4\sqrt{6} \end{aligned}$$

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

$$\begin{aligned} \textcircled{3} \quad & \sqrt{45} \times 3\sqrt{12} \\ & = 3\sqrt{5} \times 3 \times 2\sqrt{3} \\ & = 18\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & 2\sqrt{3} \times 3\sqrt{6} \\ & = 2 \times 3 \times \sqrt{3} \times \sqrt{6} \\ & = 6 \times 3\sqrt{2} \\ & = 18\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & \sqrt{24} \div \sqrt{3} \\ & = 2\sqrt{6} \div \sqrt{3} \\ & = \frac{2\sqrt{6}}{\sqrt{3}} \\ & = 2\sqrt{2} \end{aligned}$$

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

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

$$\begin{aligned} \textcircled{8} \quad & 6\sqrt{10} \div \sqrt{18} \\ & = \frac{6\sqrt{10}}{3\sqrt{2}} \\ & = 2\sqrt{5} \end{aligned}$$

(2) 次の計算をなさい。

$$\begin{aligned} \textcircled{1} \quad & \sqrt{2} \times \sqrt{3} \times \sqrt{6} \\ & = 6 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \sqrt{24} \div \sqrt{3} \times \sqrt{6} \\ & = \sqrt{\frac{24}{3}} \times 6 \\ & = \sqrt{8} \times 6 \\ & = 4\sqrt{3} \end{aligned}$$

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

$$\begin{aligned} \textcircled{4} \quad & \sqrt{5} \div \sqrt{10} \times \sqrt{6} \\ & = \sqrt{\frac{5 \times 6}{10}} \\ & = \sqrt{3} \end{aligned}$$

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

$$\begin{aligned} \textcircled{6} \quad & \sqrt{12} \div \sqrt{8} \div \sqrt{6} \\ & = \frac{\sqrt{12}}{\sqrt{8 \times 6}} \\ & = \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & \sqrt{14} \times (-2\sqrt{21}) \div 7\sqrt{3} \\ & = -\frac{\sqrt{14} \times 2\sqrt{21}}{7\sqrt{3}} \\ & = -2\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad & \sqrt{24} \div 3\sqrt{2} \times (-\sqrt{15}) \\ & = -\frac{2\sqrt{6}}{3\sqrt{2}} \times \sqrt{3} \times \sqrt{5} \\ & = -2\sqrt{5} \end{aligned}$$