

平方根 [根号をふくむ式の除法]

<演習問題>

次の計算をせよ。

(1) $\sqrt{6} \div \sqrt{2}$

(2) $\sqrt{15} \div \sqrt{3}$

(3) $-\sqrt{21} \div \sqrt{3}$

(4) $\sqrt{12} \div \sqrt{3}$

(5) $\sqrt{18} \div \sqrt{2}$

(6) $\sqrt{242} \div \sqrt{2}$

(7) $4\sqrt{8} \div 2\sqrt{2}$

(8) $3\sqrt{75} \div 5\sqrt{3}$

(9) $-4\sqrt{27} \div 6\sqrt{3}$

(10) $2\sqrt{72} \div 3\sqrt{2}$

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次の計算をせよ。

(1) $\sqrt{6} \div \sqrt{2}$

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

(2) $\sqrt{15} \div \sqrt{3}$

$$\begin{aligned}\sqrt{15} \div \sqrt{3} &= \sqrt{\frac{15}{3}} \\ &= \sqrt{5}\end{aligned}$$

(3) $-\sqrt{21} \div \sqrt{3}$

$$\begin{aligned}-\sqrt{21} \div \sqrt{3} &= -\sqrt{\frac{21}{3}} \\ &= -\sqrt{7}\end{aligned}$$

(4) $\sqrt{12} \div \sqrt{3}$

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

(5) $\sqrt{18} \div \sqrt{2}$

$$\begin{aligned}\sqrt{18} \div \sqrt{2} &= \sqrt{\frac{18}{2}} \\ &= \sqrt{9} \\ &= \sqrt{3^2} \\ &= 3\end{aligned}$$

(6) $\sqrt{242} \div \sqrt{2}$

$$\begin{aligned}\sqrt{242} \div \sqrt{2} &= \sqrt{\frac{242}{2}} \\ &= \sqrt{121} \\ &= \sqrt{11^2} \\ &= 11\end{aligned}$$

(7) $4\sqrt{8} \div 2\sqrt{2}$

$$\begin{aligned}4\sqrt{8} \div 2\sqrt{2} &= \frac{4\sqrt{8}}{2\sqrt{2}} \\ &= 2\sqrt{4} \\ &= 2\sqrt{2^2} \\ &= 2 \times 2 \\ &= 4\end{aligned}$$

(8) $3\sqrt{75} \div 5\sqrt{3}$

$$\begin{aligned}3\sqrt{75} \div 5\sqrt{3} &= \frac{3\sqrt{75}}{5\sqrt{3}} \\ &= \frac{3}{5}\sqrt{25} \\ &= \frac{3}{5}\sqrt{5^2} \\ &= \frac{3}{5} \times 5 \\ &= 3\end{aligned}$$

(9) $-4\sqrt{27} \div 6\sqrt{3}$

$$\begin{aligned}-4\sqrt{27} \div 6\sqrt{3} &= -\frac{4\sqrt{27}}{6\sqrt{3}} \\ &= -\frac{2}{3}\sqrt{9} \\ &= -\frac{2}{3}\sqrt{3^2} \\ &= -\frac{2}{3} \times 3 \\ &= -2\end{aligned}$$

(10) $2\sqrt{72} \div 3\sqrt{2}$

$$\begin{aligned}2\sqrt{72} \div 3\sqrt{2} &= \frac{2\sqrt{72}}{3\sqrt{2}} \\ &= \frac{2}{3}\sqrt{36} \\ &= \frac{2}{3}\sqrt{2^2 \times 3^2} \\ &= \frac{2}{3} \times 2 \times 3 \\ &= 4\end{aligned}$$