

平方根の変形 解答と解説

1 解答 (1) (ア) $\sqrt{12}$ (イ) $\sqrt{7}$ (2) (ア) $3\sqrt{5}$ (イ) $2\sqrt{13}$

$$\begin{aligned} (1) \text{ (ア)} \quad 2\sqrt{3} &= \sqrt{2^2} \times \sqrt{3} \\ &= \sqrt{2^2 \times 3} \\ &= \sqrt{12} \end{aligned}$$

$$\begin{aligned} (1) \text{ (イ)} \quad \frac{\sqrt{28}}{2} &= \frac{\sqrt{28}}{\sqrt{2^2}} \\ &= \sqrt{\frac{28}{2^2}} \\ &= \sqrt{7} \end{aligned}$$

$$\begin{aligned} (2) \text{ (ア)} \quad \sqrt{45} &= \sqrt{9 \times 5} \\ &= \sqrt{9} \times \sqrt{5} \\ &= 3\sqrt{5} \end{aligned}$$

$$\begin{aligned} (1) \text{ (イ)} \quad \sqrt{52} &= \sqrt{4 \times 13} \\ &= \sqrt{4} \times \sqrt{13} \\ &= 2\sqrt{13} \end{aligned}$$

2 解答 (1) $4\sqrt{6}$ (2) $3\sqrt{14}$ (3) $\frac{\sqrt{3}}{7}$ (4) $\frac{\sqrt{5}}{10}$

$$\begin{aligned} (1) \quad \sqrt{96} &= \sqrt{2^5 \times 3} \\ &= \sqrt{4^2 \times 6} \\ &= \sqrt{4^2} \times \sqrt{6} \\ &= 4\sqrt{6} \end{aligned}$$

$$\begin{aligned} (2) \quad \sqrt{126} &= \sqrt{2 \times 3^2 \times 7} \\ &= \sqrt{3^2 \times 14} \\ &= \sqrt{3^2} \times \sqrt{14} \\ &= 3\sqrt{14} \end{aligned}$$

$$\begin{aligned} (3) \quad \sqrt{\frac{3}{49}} &= \frac{\sqrt{3}}{\sqrt{49}} \\ &= \frac{\sqrt{3}}{7} \end{aligned}$$

$$\begin{aligned} (4) \quad \sqrt{0.05} &= \sqrt{\frac{5}{100}} \\ &= \frac{\sqrt{5}}{\sqrt{100}} \\ &= \frac{\sqrt{5}}{10} \end{aligned}$$

$\begin{array}{r} 2 \overline{) 96} \\ \underline{2) 48} \\ 2 \overline{) 24} \\ \underline{2) 12} \\ 2 \overline{) 6} \\ \underline{} \\ 3 \end{array}$	$\begin{array}{r} 2 \overline{) 126} \\ \underline{3) 63} \\ 3 \overline{) 21} \\ \underline{} \\ 7 \end{array}$
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