

$\sqrt{12}$ の計算

$$\sqrt{12}$$

$\sqrt{12}$ の計算

12

$\sqrt{12}$

$\sqrt{12}$ の計算

$$2) \underline{\quad 12 \quad}$$

$$\sqrt{12}$$

$\sqrt{12}$ の計算

$$2 \) \ \underline{12}$$

6

$$\sqrt{12}$$

$\sqrt{12}$ の計算

$$2 \) \ \underline{12}$$

$$2 \) \ \underline{6}$$

$$\sqrt{12}$$

$\sqrt{12}$ の計算

$$2 \) \ \underline{12}$$

$$2 \) \ \underline{6}$$

3

$$\sqrt{12}$$

$\sqrt{12}$ の計算

$$\begin{array}{r} 2 \) \ 12 \\ \hline 2 \) \ 6 \\ \hline 3 \end{array}$$

$$\sqrt{12}$$

$\sqrt{12}$ の計算

$$\begin{array}{r} 2 \) \ 12 \\ \hline 2 \) \ 6 \\ \hline 3 \end{array}$$

$$\sqrt{12} = \sqrt{2 \times 2 \times 3}$$

$\sqrt{12}$ の計算

$$\begin{array}{r} 2 \) \ 12 \\ \hline 2 \) \ 6 \\ \hline 3 \end{array}$$

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

$\sqrt{12}$ の計算

$$\begin{array}{r} 2 \) \ 12 \\ \hline 2 \) \ 6 \\ \hline 3 \end{array}$$

$$\begin{aligned} \sqrt{12} &= \sqrt{2 \times 2 \times 3} \\ &= \sqrt{2 \times 2 \times 3} \\ &= 2\sqrt{3} \quad \boxed{\text{答}} \end{aligned}$$

ペアになると $\sqrt{\quad}$ の外に出すことができる

$\sqrt{54}$ の計算

$$\sqrt{54}$$

$\sqrt{54}$ の計算

$$\begin{array}{r} 2 \) \ 54 \\ \hline 3 \) \ 27 \\ \hline 3 \) \ 9 \\ \hline 3 \end{array}$$

$$\sqrt{54}$$

$\sqrt{54}$ の計算

$$\begin{array}{r} 2 \) \ 54 \\ \hline 3 \) \ 27 \\ \hline 3 \) \ 9 \\ \hline 3 \end{array}$$

$$\sqrt{54} = \sqrt{2 \times 3 \times 3 \times 3}$$

$\sqrt{54}$ の計算

$$\begin{array}{r} 2 \) \ 54 \\ \hline 3 \) \ 27 \\ \hline 3 \) \ 9 \\ \hline 3 \end{array}$$

$$\begin{aligned} \sqrt{54} &= \sqrt{2 \times 3 \times 3 \times 3} \\ &= \sqrt{2 \times 3 \times 3 \times 3} \end{aligned}$$

$\sqrt{54}$ の計算

$$\begin{array}{r} 2 \) \ 54 \\ \hline 3 \) \ 27 \\ \hline 3 \) \ 9 \\ \hline 3 \end{array}$$

$$\begin{aligned} \sqrt{54} &= \sqrt{2 \times 3 \times 3 \times 3} \\ &= \sqrt{2 \times 3 \times 3 \times 3} \\ &= 3\sqrt{2} \times 3 \\ &= 3\sqrt{6} \end{aligned}$$

答

ペアになると $\sqrt{\quad}$ の外に出すことができる

$\sqrt{72}$ の計算

$$\sqrt{72}$$

$\sqrt{72}$ の計算

$$2 \overline{) 72}$$

$$2 \overline{) 36}$$

$$2 \overline{) 18}$$

$$3 \overline{) 9}$$

3

$$\sqrt{72}$$

$\sqrt{72}$ の計算

$$\begin{array}{r} 2 \) \ 72 \\ \hline 2 \) \ 36 \\ \hline 2 \) \ 18 \\ \hline 3 \) \ 9 \\ \hline 3 \end{array}$$

$$\sqrt{72} = \sqrt{2 \times 2 \times 2 \times 3 \times 3}$$

$\sqrt{72}$ の計算

$$2 \overline{) 72}$$

$$2 \overline{) 36}$$

$$2 \overline{) 18}$$

$$3 \overline{) 9}$$

3

$$\sqrt{72} = \sqrt{2 \times 2 \times 2 \times 3 \times 3}$$

$$= \sqrt{2 \times 2 \times 2 \times 3 \times 3}$$

$$= 2 \times 3 \sqrt{2}$$

$$= 6 \sqrt{2}$$

答

ペアになると $\sqrt{\quad}$ の外に出すことができる

$\sqrt{\quad}$ の計算

$$2\sqrt{5} + 6\sqrt{5}$$

$\sqrt{\quad}$ の計算

$$2\sqrt{5} + 6\sqrt{5}$$

$$= 8\sqrt{5} \quad \boxed{\text{答}}$$

$\sqrt{5}$ 同じ種類は計算する

$\sqrt{\quad}$ の計算

$$-2\sqrt{3} + \sqrt{3} + 7\sqrt{3}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & -2\sqrt{3} + \sqrt{3} + 7\sqrt{3} \\ = & -2\sqrt{3} + 1\sqrt{3} + 7\sqrt{3} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & -2\sqrt{3} + \sqrt{3} + 7\sqrt{3} \\ = & -2\sqrt{3} + 1\sqrt{3} + 7\sqrt{3} \\ = & 6\sqrt{3} \quad \boxed{\text{答}} \end{aligned}$$

$-2 + 1 + 7$ を計算

$\sqrt{\quad}$ の計算

$$7\sqrt{3} + 4\sqrt{2} - 5\sqrt{3}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & 7\sqrt{3} + 4\sqrt{2} - 5\sqrt{3} \\ = & 7\sqrt{3} + 4\sqrt{2} - 5\sqrt{3} \end{aligned}$$

√ の計算

$$\begin{aligned} & 7\sqrt{3} + 4\sqrt{2} - 5\sqrt{3} \\ = & 7\sqrt{3} + 4\sqrt{2} - 5\sqrt{3} \\ = & 2\sqrt{3} + 4\sqrt{2} \quad \boxed{\text{答}} \end{aligned}$$

同じ種類は計算する
違う種類は計算したらダメ！

$\sqrt{\quad}$ の計算

$$\sqrt{12} + \sqrt{3}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{12} + \sqrt{3} \\ = & \sqrt{2 \times 2 \times 3} + \sqrt{3} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{12} + \sqrt{3} \\ = & \sqrt{2 \times 2 \times 3} + \sqrt{3} \\ = & 2\sqrt{3} + \sqrt{3} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{12} + \sqrt{3} \\ = & \sqrt{2 \times 2 \times 3} + \sqrt{3} \\ = & 2\sqrt{3} + \sqrt{3} \\ = & 3\sqrt{3} \end{aligned}$$

答

$\sqrt{12} = 2\sqrt{3}$ だ！

$\sqrt{\quad}$ の計算

$$\sqrt{18} - 4\sqrt{2} + \sqrt{8}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{18} - 4\sqrt{2} + \sqrt{8} \\ = & \sqrt{2 \times 3 \times 3} - 4\sqrt{2} + \sqrt{2 \times 2 \times 2} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{18} - 4\sqrt{2} + \sqrt{8} \\ = & \sqrt{2 \times 3 \times 3} - 4\sqrt{2} + \sqrt{2 \times 2 \times 2} \\ = & 3\sqrt{2} - 4\sqrt{2} + 2\sqrt{2} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{18} - 4\sqrt{2} + \sqrt{8} \\ = & \sqrt{2 \times 3 \times 3} - 4\sqrt{2} + \sqrt{2 \times 2 \times 2} \\ = & 3\sqrt{2} - 4\sqrt{2} + 2\sqrt{2} \\ = & \sqrt{2} \quad \boxed{\text{答}} \end{aligned}$$

$$\sqrt{18} = 3\sqrt{2}, \quad \sqrt{8} = 2\sqrt{2} \text{ だ!}$$

$\sqrt{\quad}$ の計算

$$\sqrt{3}(\sqrt{7}-\sqrt{2})$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{3}(\sqrt{7}-\sqrt{2}) \\ = & \sqrt{3}\times\sqrt{7}-\sqrt{3}\times\sqrt{2} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{3}(\sqrt{7}-\sqrt{2}) \\ &= \sqrt{3} \times \sqrt{7} - \sqrt{3} \times \sqrt{2} \\ &= \sqrt{21} - \sqrt{6} \quad \boxed{\text{答}} \end{aligned}$$

$\sqrt{21}$, $\sqrt{6}$ はもう簡単にはできない
種類も違うので、これ以上計算したらダメ！

$\sqrt{\quad}$ の計算

$$\sqrt{2}(\sqrt{10} + \sqrt{6})$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{2}(\sqrt{10} + \sqrt{6}) \\ = & \sqrt{2} \times \sqrt{10} + \sqrt{2} \times \sqrt{6} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{2}(\sqrt{10} + \sqrt{6}) \\ = & \sqrt{2} \times \sqrt{10} + \sqrt{2} \times \sqrt{6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{2}(\sqrt{10} + \sqrt{6}) \\ = & \sqrt{2} \times \sqrt{10} + \sqrt{2} \times \sqrt{6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{2}(\sqrt{10} + \sqrt{6}) \\ = & \sqrt{2} \times \sqrt{10} + \sqrt{2} \times \sqrt{6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \\ = & \sqrt{2 \times 2 \times 5} + \sqrt{2 \times 2 \times 3} \end{aligned}$$

$\sqrt{\quad}$ の計算

$$\begin{aligned} & \sqrt{2}(\sqrt{10} + \sqrt{6}) \\ = & \sqrt{2} \times \sqrt{10} + \sqrt{2} \times \sqrt{6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \\ = & \sqrt{2 \times 10} + \sqrt{2 \times 6} \\ = & \sqrt{2 \times 2 \times 5} + \sqrt{2 \times 2 \times 3} \\ = & 2\sqrt{5} + 2\sqrt{3} \end{aligned}$$

答