

平方根の乗法(1)

例題 次の計算をせよ。

(1) $\sqrt{3} \times \sqrt{5}$

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

(3) $3\sqrt{2} \times 5\sqrt{6}$

答

答

答

練習 次の計算をせよ

(1) $\sqrt{2} \times \sqrt{3}$

答

(2) $\sqrt{5} \times \sqrt{6}$

答

(3) $\sqrt{7} \times \sqrt{11}$

答

(4) $\sqrt{2} \times \sqrt{7}$

答

(5) $\sqrt{2} \times 3\sqrt{5}$

答

(6) $2\sqrt{3} \times 3\sqrt{5}$

答

平方根の乗法(2)

例題 次の計算をせよ。(√の中を簡単にして、かけ算)

(1) $\sqrt{18} \times \sqrt{3}$

(2) $2\sqrt{18} \times 3\sqrt{54}$

答

答

練習 次の計算をせよ。

(1) $\sqrt{5} \times \sqrt{18}$

(3) $\sqrt{20} \times \sqrt{8}$

答

答

(2) $\sqrt{8} \times \sqrt{6}$

(4) $\sqrt{45} \times \sqrt{15}$

答

答

平方根の乗法(3)

例題 次の計算をせよ。(√の中を因数の積に分解して計算)

(1) $\sqrt{3} \times \sqrt{2} \times \sqrt{3} \times \sqrt{7}$

(2) $\sqrt{10} \times \sqrt{15}$

(3) $3\sqrt{6} \times \sqrt{12}$

答

答

答

練習 次の計算をせよ。

(1) $\sqrt{3} \times \sqrt{2} \times \sqrt{5} \times \sqrt{3}$

答

(2) $\sqrt{2} \times \sqrt{7} \times \sqrt{7} \times \sqrt{2}$

答

(3) $\sqrt{5} \times \sqrt{3} \times \sqrt{2} \times \sqrt{2}$

答

(4) $2 \times \sqrt{7} \times \sqrt{7}$

答

(5) $3\sqrt{5} \times 4\sqrt{5}$

答

(6) $3\sqrt{2} \times \sqrt{5} \times 2\sqrt{2}$

答

平方根の乗法(1)

例題 次の計算をせよ。

(1) $\sqrt{3} \times \sqrt{5}$

★
 $\sqrt{3} \times \sqrt{5} = \sqrt{3 \times 5}$
 $= \sqrt{15}$

答 $\sqrt{15}$

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

★
 $-2\sqrt{3} \times 3\sqrt{7} = -2 \times 3 \sqrt{3 \times 7}$
 $= -6\sqrt{21}$

答 $-6\sqrt{21}$

(3) $3\sqrt{2} \times 5\sqrt{6}$

★
 $3\sqrt{2} \times 5\sqrt{6} = 3 \times 5 \sqrt{2 \times 6}$
 $= 15\sqrt{12}$
 $= 15\sqrt{2^2 \times 3}$
 $= 15 \times 2\sqrt{3}$
 $= 30\sqrt{3}$

答 $30\sqrt{3}$

練習 次の計算をせよ

(1) $\sqrt{2} \times \sqrt{3}$

★
 $\sqrt{2} \times \sqrt{3} = \sqrt{2 \times 3}$
 $= \sqrt{6}$

答 $\sqrt{6}$

(2) $\sqrt{5} \times \sqrt{6}$

★
 $\sqrt{5} \times \sqrt{6} = \sqrt{5 \times 6}$
 $= \sqrt{30}$

答 $\sqrt{30}$

(3) $\sqrt{7} \times \sqrt{11}$

★
 $\sqrt{7} \times \sqrt{11} = \sqrt{7 \times 11}$
 $= \sqrt{77}$

答 $\sqrt{77}$

(4) $\sqrt{2} \times \sqrt{7}$

★
 $\sqrt{2} \times \sqrt{7} = \sqrt{2 \times 7}$
 $= \sqrt{14}$

答 $\sqrt{14}$

(5) $\sqrt{2} \times 3\sqrt{5}$

★
 $\sqrt{2} \times 3\sqrt{5} = 3\sqrt{2 \times 5}$
 $= 3\sqrt{10}$

答 $3\sqrt{10}$

(6) $2\sqrt{3} \times 3\sqrt{5}$

★
 $2\sqrt{3} \times 3\sqrt{5} = 2 \times 3 \sqrt{3 \times 5}$
 $= 6\sqrt{15}$

答 $6\sqrt{15}$

平方根の乗法(2)

例題 次の計算をせよ。(√の中を簡単にして、かけ算)

(1) $\sqrt{18} \times \sqrt{3}$

★
$$\begin{aligned}\sqrt{18} \times \sqrt{3} &= 3\sqrt{2} \times \sqrt{3} \\ &= 3\sqrt{2 \times 3} \\ &= 3\sqrt{6}\end{aligned}$$

答 $3\sqrt{6}$

(2) $2\sqrt{18} \times 3\sqrt{54}$

★
$$\begin{aligned}2\sqrt{18} \times 3\sqrt{54} &= 2 \times 3\sqrt{2} \times 3 \times 3\sqrt{6} \\ &= 54\sqrt{2 \times 6} \\ &= 54\sqrt{12} \\ &= 54 \times 2\sqrt{3} \\ &= 108\sqrt{3}\end{aligned}$$

答 $108\sqrt{3}$

練習 次の計算をせよ。

(1) $\sqrt{5} \times \sqrt{18}$

★
$$\begin{aligned}\sqrt{5} \times \sqrt{18} &= \sqrt{5} \times 3\sqrt{2} \\ &= 3\sqrt{5 \times 2} \\ &= 3\sqrt{10}\end{aligned}$$

答 $3\sqrt{10}$

(3) $\sqrt{20} \times \sqrt{8}$

★
$$\begin{aligned}\sqrt{20} \times \sqrt{8} &= 2\sqrt{5} \times 2\sqrt{2} \\ &= 4\sqrt{10}\end{aligned}$$

答 $4\sqrt{10}$

(2) $\sqrt{8} \times \sqrt{6}$

★
$$\begin{aligned}\sqrt{8} \times \sqrt{6} &= 2\sqrt{2} \times \sqrt{6} \\ &= 2\sqrt{2 \times 6} \\ &= 2\sqrt{12} \\ &= 2 \times 2\sqrt{3} \\ &= 4\sqrt{3}\end{aligned}$$

答 $4\sqrt{3}$

(4) $\sqrt{45} \times \sqrt{15}$

★
$$\begin{aligned}\sqrt{45} \times \sqrt{15} &= 3\sqrt{5} \times \sqrt{15} \\ &= 3 \times \sqrt{5 \times 15} \\ &= 3\sqrt{75} \\ &= 3 \times 5\sqrt{3} \\ &= 15\sqrt{3}\end{aligned}$$

答 $15\sqrt{3}$

平方根の乗法(3)

例題 次の計算をせよ。(√の中を因数の積に分解して計算)

(1) $\sqrt{3} \times \sqrt{2} \times \sqrt{3} \times \sqrt{7}$

★

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

答

$3\sqrt{14}$

(2) $\sqrt{10} \times \sqrt{15}$

★

$$\begin{aligned}\sqrt{10} \times \sqrt{15} &= \sqrt{2} \times \sqrt{5} \times \sqrt{3} \times \sqrt{5} \\ &= (\sqrt{5})^2 \times \sqrt{2 \times 3} \\ &= 5\sqrt{6}\end{aligned}$$

答

$5\sqrt{6}$

(3) $3\sqrt{6} \times \sqrt{12}$

★

$$\begin{aligned}3\sqrt{6} \times \sqrt{12} &= 3\sqrt{6} \times \sqrt{2} \times \sqrt{6} \\ &= 3 \times (\sqrt{6})^2 \times \sqrt{2} \\ &= 18\sqrt{2}\end{aligned}$$

答

$18\sqrt{2}$

練習 次の計算をせよ。

(1) $\sqrt{3} \times \sqrt{2} \times \sqrt{5} \times \sqrt{3}$

★

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

答

$3\sqrt{10}$

(2) $\sqrt{2} \times \sqrt{7} \times \sqrt{7} \times \sqrt{2}$

★

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

答

14

(3) $\sqrt{5} \times \sqrt{3} \times \sqrt{2} \times \sqrt{2}$

★

$$\begin{aligned}\sqrt{5} \times \sqrt{3} \times \sqrt{2} \times \sqrt{2} &= \sqrt{5 \times 3} \times (\sqrt{2})^2 \\ &= 2\sqrt{15}\end{aligned}$$

答

$2\sqrt{15}$

(4) $2 \times \sqrt{7} \times \sqrt{7}$

★

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

答

14

(5) $3\sqrt{5} \times 4\sqrt{5}$

★

$$\begin{aligned}3\sqrt{5} \times 4\sqrt{5} &= 3 \times 4 \times (\sqrt{5})^2 \\ &= 12 \times 5 \\ &= 60\end{aligned}$$

答

60

(6) $3\sqrt{2} \times \sqrt{5} \times 2\sqrt{2}$

★

$$\begin{aligned}3\sqrt{2} \times \sqrt{5} \times 2\sqrt{2} &= 3 \times 2 \times (\sqrt{2})^2 \times \sqrt{5} \\ &= 6 \times 2 \times \sqrt{5} \\ &= 12\sqrt{5}\end{aligned}$$

答

$12\sqrt{5}$