

平方根 [有理化]

<演習問題>

次の数の分母を有理化せよ。

(1) $\frac{1}{\sqrt{6}}$

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

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

(4) $\frac{\sqrt{3}}{\sqrt{7}}$

(5) $\frac{\sqrt{15}}{\sqrt{2}}$

(6) $\frac{7}{4\sqrt{3}}$

<演習問題>

次の計算をせよ。

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

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

(3) $10 \div \sqrt{5}$

(4) $3 \div \sqrt{6}$

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次の数の分母を有理化せよ。

$$(1) \frac{1}{\sqrt{6}}$$

$$\begin{aligned}\frac{1}{\sqrt{6}} &= \frac{1 \times \sqrt{6}}{\sqrt{6} \times \sqrt{6}} \\ &= \frac{\sqrt{6}}{6}\end{aligned}$$

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

$$\begin{aligned}-\frac{3}{\sqrt{3}} &= -\frac{3 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} \\ &= -\frac{3\sqrt{3}}{3} \\ &= -\sqrt{3}\end{aligned}$$

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

$$\begin{aligned}\frac{5}{2\sqrt{2}} &= \frac{5 \times \sqrt{2}}{2\sqrt{2} \times \sqrt{2}} \\ &= \frac{5\sqrt{2}}{2 \times 2} \\ &= \frac{5\sqrt{2}}{4}\end{aligned}$$

$$(4) \frac{\sqrt{3}}{\sqrt{7}}$$

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

$$(5) \frac{\sqrt{15}}{\sqrt{2}}$$

$$\begin{aligned}\frac{\sqrt{15}}{\sqrt{2}} &= \frac{\sqrt{15} \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\ &= \frac{\sqrt{30}}{2}\end{aligned}$$

$$(6) \frac{7}{4\sqrt{3}}$$

$$\begin{aligned}\frac{7}{4\sqrt{3}} &= \frac{7 \times \sqrt{3}}{4\sqrt{3} \times \sqrt{3}} \\ &= \frac{7\sqrt{3}}{4 \times 3} \\ &= \frac{7\sqrt{3}}{12}\end{aligned}$$

<演習問題>

次の計算をせよ。

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

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

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

$$\begin{aligned}7 \div \sqrt{2} &= \frac{7}{\sqrt{2}} \\ &= \frac{7 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} \\ &= \frac{7\sqrt{2}}{2}\end{aligned}$$

$$(3) 10 \div \sqrt{5}$$

$$\begin{aligned}10 \div \sqrt{5} &= \frac{10}{\sqrt{5}} \\ &= \frac{10 \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}} \\ &= \frac{10\sqrt{5}}{5} \\ &= 2\sqrt{5}\end{aligned}$$

$$(4) 3 \div \sqrt{6}$$

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