

平方根のおよその値（２）

学習日 月 日

年 組 番 氏名

(1) $\sqrt{3} = 1.732$ として、次の値を求めなさい。

① $\sqrt{12}$

② $\sqrt{75}$

③ $\sqrt{\frac{3}{16}}$

④ $\sqrt{\frac{12}{25}}$

(2) $\sqrt{5} = 2.236$, $\sqrt{50} = 7.071$ として、次の値を求めなさい。

① $\sqrt{500}$

② $\sqrt{5000}$

③ $\sqrt{0.5}$

④ $\sqrt{0.05}$

(3) $\sqrt{2} = 1.414$, $\sqrt{3} = 1.732$, $\sqrt{5} = 2.236$ として、次の値を求めなさい。

① $\frac{2}{\sqrt{5}}$

② $\frac{1}{\sqrt{8}}$

③ $\frac{\sqrt{2}}{\sqrt{6}}$

④ $\frac{\sqrt{8}}{\sqrt{6}}$

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(1) $\sqrt{3} = 1.732$ として、次の値を求めなさい。

$$\begin{aligned} \textcircled{1} \quad & \sqrt{12} \\ & = 2\sqrt{3} = 2 \times 1.732 \\ & = 3.464 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \sqrt{75} \\ & = 5\sqrt{3} = \frac{10}{2} \times 1.732 \\ & = 8.66 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & \sqrt{\frac{3}{16}} \\ & = \frac{\sqrt{3}}{4} = \frac{1.732}{4} \\ & = 0.433 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \sqrt{\frac{12}{25}} \\ & = \frac{2\sqrt{3}}{5} = \frac{4}{10} \times 1.732 \\ & = 0.6928 \end{aligned}$$

(2) $\sqrt{5} = 2.236$, $\sqrt{50} = 7.071$ として、次の値を求めなさい。

$$\begin{aligned} \textcircled{1} \quad & \sqrt{500} \\ & = 10\sqrt{5} \\ & = 10 \times 2.236 \\ & = 22.36 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \sqrt{5000} \\ & = \sqrt{100 \times 50} = 10\sqrt{50} \\ & = 10 \times 7.071 \\ & = 70.71 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & \sqrt{0.5} \\ & = \sqrt{0.01 \times 50} \\ & = 0.1 \times \sqrt{50} \\ & = 0.1 \times 7.071 \\ & = 0.7071 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \sqrt{0.05} \\ & = \sqrt{0.01 \times 5} \\ & = 0.1 \times \sqrt{5} \\ & = 0.1 \times 2.236 \\ & = 0.2236 \end{aligned}$$

(3) $\sqrt{2} = 1.414$, $\sqrt{3} = 1.732$, $\sqrt{5} = 2.236$ として、次の値を求めなさい。

$$\begin{aligned} \textcircled{1} \quad & \frac{2}{\sqrt{5}} \\ & = \frac{2\sqrt{5}}{5} \\ & = \frac{4}{10} \times 2.236 \\ & = 0.8944 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & \frac{1}{\sqrt{8}} \\ & = \frac{1}{2\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} \\ & = \frac{\sqrt{2}}{4} \\ & = \frac{1.414}{4} \\ & = 0.3535 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad & \frac{\sqrt{2}}{\sqrt{6}} \\ & = \frac{\sqrt{2}}{\sqrt{2}\sqrt{3}} \\ & = \frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} \\ & = \frac{\sqrt{3}}{3} \\ & = \frac{1.732}{3} \\ & = 0.5773 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & \frac{\sqrt{8}}{\sqrt{6}} \\ & = \frac{2\sqrt{2}}{\sqrt{2}\sqrt{3}} \\ & = \frac{2}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} \\ & = \frac{2\sqrt{3}}{3} \\ & = \frac{2 \times 1.732}{3} \\ & = 1.155 \end{aligned}$$