

平方根⑤ (解答と解説)

1 [解答] (1) 6, -6 (2) 0.4, -0.4 (3) $\frac{1}{2}$, $-\frac{1}{2}$ (4) $\sqrt{10}$, $-\sqrt{10}$

(5) $\sqrt{0.1}$, $-\sqrt{0.1}$

(1) $6^2=36$, $(-6)^2=36$ であるから, 36 の平方根は 6, -6

(2) $0.4^2=0.16$, $(-0.4)^2=0.16$ であるから, 0.16 の平方根は 0.4, -0.4

(3) $\left(\frac{1}{2}\right)^2=\frac{1}{4}$, $\left(-\frac{1}{2}\right)^2=\frac{1}{4}$ であるから, $\frac{1}{4}$ の平方根は $\frac{1}{2}$, $-\frac{1}{2}$

(4) 10 の平方根は $\sqrt{10}$, $-\sqrt{10}$

(5) 0.1 の平方根は $\sqrt{0.1}$, $-\sqrt{0.1}$

2 [解答] (1) 4 (2) $\sqrt{6}$ (3) $9\sqrt{3}$ (4) $\sqrt{3}$ (5) $4\sqrt{2}$ (6) $\frac{\sqrt{6}}{3}$

$$\begin{aligned} (1) \quad \sqrt{2} \times \sqrt{8} &= \sqrt{2 \times 8} \\ &= \sqrt{16} \\ &= 4 \end{aligned}$$

$$(2) \quad \sqrt{15} \times \sqrt{8} \div \sqrt{20} = \sqrt{\frac{15 \times 8}{20}} = \sqrt{6}$$

$$\begin{aligned} (3) \quad \sqrt{48} + \sqrt{75} &= 4\sqrt{3} + 5\sqrt{3} \\ &= 9\sqrt{3} \end{aligned}$$

$$\begin{aligned} (4) \quad \frac{12}{\sqrt{3}} - \sqrt{27} &= \frac{12 \times \sqrt{3}}{\sqrt{3} \times \sqrt{3}} - 3\sqrt{3} \\ &= \frac{12\sqrt{3}}{3} - 3\sqrt{3} \\ &= 4\sqrt{3} - 3\sqrt{3} \\ &= \sqrt{3} \end{aligned}$$

$$\begin{aligned} (5) \quad \sqrt{8} - \sqrt{18} + \sqrt{50} &= 2\sqrt{2} - 3\sqrt{2} + 5\sqrt{2} \\ &= 4\sqrt{2} \end{aligned}$$

$$\begin{aligned} (6) \quad \frac{\sqrt{8}}{3} \times \sqrt{3} - \frac{2}{\sqrt{6}} &= \frac{\sqrt{24}}{3} - \frac{2 \times \sqrt{6}}{\sqrt{6} \times \sqrt{6}} \\ &= \frac{2\sqrt{6}}{3} - \frac{2\sqrt{6}}{6} \end{aligned}$$

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

3 [解答] 0.866

$$\begin{aligned} \sqrt{0.75} &= \sqrt{\frac{3}{4}} \\ &= \frac{\sqrt{3}}{2} \\ &= 1.732 \div 2 \\ &= 0.866 \end{aligned}$$