

# 平方根（いろいろな計算）

組 番 名前

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1 次の計算をなさい。

$$\begin{aligned} \textcircled{1} \quad 7\sqrt{2} + 2\sqrt{2} \\ = 9\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad -2\sqrt{5} + 3\sqrt{5} + 4\sqrt{5} \\ = 5\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \sqrt{28} - \sqrt{63} \\ = 2\sqrt{7} - 3\sqrt{7} \\ = -\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \sqrt{3} + \sqrt{75} - \sqrt{48} \\ = \sqrt{3} + 5\sqrt{3} - 4\sqrt{3} \\ = -3\sqrt{3} + 5\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \sqrt{8} - \sqrt{50} - \sqrt{18} \\ = 2\sqrt{2} - 5\sqrt{2} - 3\sqrt{2} \\ = -6\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \sqrt{12} + \frac{9}{\sqrt{3}} \\ = 2\sqrt{3} + 3\sqrt{3} \\ = 5\sqrt{3} \end{aligned}$$

2 次の式を展開しなさい。

$$\begin{aligned} \textcircled{1} \quad \sqrt{2}(\sqrt{5} + 1) \\ = \sqrt{10} + \sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \sqrt{3}(2 - \sqrt{3}) \\ = 2\sqrt{3} - 3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \sqrt{5}(\sqrt{3} + \sqrt{2}) \\ = \sqrt{15} + \sqrt{10} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad \sqrt{2}(\sqrt{8} - \sqrt{6}) \\ = \sqrt{16} - \sqrt{12} \\ = 4 - 2\sqrt{3} \end{aligned}$$

3 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} \quad (\sqrt{2} + 3)(\sqrt{3} + 2) \\ = \sqrt{6} + 2\sqrt{2} + 3\sqrt{3} + 6 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad (\sqrt{5} - 1)(2\sqrt{5} + 5) \\ = 10 + 5\sqrt{5} - 2\sqrt{5} - 5 \\ = 3\sqrt{5} + 5 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad (2\sqrt{3} - 3)(3\sqrt{3} - 4) \\ = 18 - 8\sqrt{3} - 9\sqrt{3} + 12 \\ = 30 - 17\sqrt{3} \end{aligned}$$

4 次の式を展開しなさい。

$$\begin{aligned} \textcircled{1} \quad (\sqrt{5} + 1)^2 &= 5 + 2\sqrt{5} + 1 \\ &= 6 + 2\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad (\sqrt{2} - 3)^2 &= 2 - 6\sqrt{2} + 9 \\ &= 11 - 6\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad (\sqrt{3} + \sqrt{7})^2 &= 3 + 2\sqrt{21} + 7 \\ &= 10 + 2\sqrt{21} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad (2 - \sqrt{6})^2 &= 4 - 4\sqrt{6} + 6 \\ &= 10 - 4\sqrt{6} \end{aligned}$$