

根号を含む式の展開

年 組 名前

/16

■ 次の式を計算しなさい。

① $(\sqrt{10} - 7)^2$

⑦ $(2\sqrt{2} - \sqrt{7})^2$

⑬ $(\sqrt{3} + \sqrt{2})^2$

② $(\sqrt{6} - 2)(\sqrt{6} - 5)$

⑧ $(6 + 4\sqrt{3})^2$

⑭ $(1 - 3\sqrt{2})(1 + 3\sqrt{2})$

③ $(\sqrt{5} + 1)(\sqrt{5} + 2)$

⑨ $(\sqrt{5} + \sqrt{10})(\sqrt{5} - \sqrt{10})$

⑮ $(\sqrt{15} + 1)(\sqrt{15} + 6)$

④ $(\sqrt{13} - 3)(\sqrt{13} + 3)$

⑩ $(2 - \sqrt{7})^2$

⑯ $(\sqrt{2} - 1)(\sqrt{2} + 5)$

⑤ $(\sqrt{6} - 3\sqrt{2})(\sqrt{6} + 3\sqrt{2})$

⑪ $(5 + \sqrt{3})(5 - \sqrt{3})$

⑰ $(2\sqrt{5} + 8)^2$

⑥ $(2\sqrt{7} + 4)(2\sqrt{7} - 4)$

⑫ $(2\sqrt{3} + 2)(2\sqrt{3} - 6)$

⑱ $(3\sqrt{3} - 3)(3\sqrt{3} + 4)$

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} (\sqrt{10} - 7)^2 \\ &= 10 - 14\sqrt{10} + 49 \\ &= 59 - 14\sqrt{10} \end{aligned}$$

$$\begin{aligned} \textcircled{2} (\sqrt{6} - 2)(\sqrt{6} - 5) \\ &= 6 - 5\sqrt{6} - 2\sqrt{6} + 10 \\ &= 16 - 7\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{3} (\sqrt{5} + 1)(\sqrt{5} + 2) \\ &= 5 + 2\sqrt{5} + \sqrt{5} + 2 \\ &= 7 + 3\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{4} (\sqrt{13} - 3)(\sqrt{13} + 3) \\ &= 13 - 9 \\ &= 4 \end{aligned}$$

$$\begin{aligned} \textcircled{5} (\sqrt{6} - 3\sqrt{2})(\sqrt{6} + 3\sqrt{2}) \\ &= 6 - 18 \\ &= -12 \end{aligned}$$

$$\begin{aligned} \textcircled{6} (2\sqrt{7} + 4)(2\sqrt{7} - 4) \\ &= 28 - 16 \\ &= 12 \end{aligned}$$

$$\begin{aligned} \textcircled{7} (2\sqrt{2} - \sqrt{7})^2 \\ &= 8 - 4\sqrt{14} + 7 \\ &= 15 - 4\sqrt{14} \end{aligned}$$

$$\begin{aligned} \textcircled{8} (6 + 4\sqrt{3})^2 \\ &= 36 + 48\sqrt{3} + 48 \\ &= 84 + 48\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{9} (\sqrt{5} + \sqrt{10})(\sqrt{5} - \sqrt{10}) \\ &= 5 - 10 \\ &= -5 \end{aligned}$$

$$\begin{aligned} \textcircled{10} (2 - \sqrt{7})^2 \\ &= 4 - 4\sqrt{7} + 7 \\ &= 11 - 4\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{11} (5 + \sqrt{3})(5 - \sqrt{3}) \\ &= 25 - 3 \\ &= 22 \end{aligned}$$

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

$$\begin{aligned} \textcircled{13} (\sqrt{3} + \sqrt{2})^2 \\ &= 3 + 2\sqrt{6} + 2 \\ &= 5 + 2\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{14} (1 - 3\sqrt{2})(1 + 3\sqrt{2}) \\ &= 1 - 18 \\ &= -17 \end{aligned}$$

$$\begin{aligned} \textcircled{15} (\sqrt{15} + 1)(\sqrt{15} + 6) \\ &= 15 + 6\sqrt{15} + \sqrt{15} + 6 \\ &= 21 + 7\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{16} (\sqrt{2} - 1)(\sqrt{2} + 5) \\ &= 2 + 5\sqrt{2} - \sqrt{2} - 5 \\ &= -3 + 4\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{17} (2\sqrt{5} + 8)^2 \\ &= 20 + 32\sqrt{5} + 64 \\ &= 84 + 32\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (3\sqrt{3} - 3)(3\sqrt{3} + 4) \\ &= 27 + 12\sqrt{3} - 9\sqrt{3} - 12 \\ &= 15 + 3\sqrt{3} \end{aligned}$$