

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 $(2\sqrt{3} - \sqrt{7})(2\sqrt{3} + \sqrt{7})$

⑦ $(2\sqrt{3} + 1)(2\sqrt{3} - 1)$

⑬ $(5 + \sqrt{13})(5 - \sqrt{13})$

② $(3 + \sqrt{10})^2$

⑧ $(\sqrt{2} + 3)(\sqrt{2} - 4)$

⑭ $(\sqrt{6} - 2)(\sqrt{6} + 3)$

③ $(3\sqrt{2} - 4)^2$

⑨ $(2 - 4\sqrt{2})^2$

⑮ $(\sqrt{3} - \sqrt{2})^2$

④ $(\sqrt{6} + \sqrt{10})^2$

⑩ $(\sqrt{7} + 7)^2$

⑯ $(6 - \sqrt{3})(6 + \sqrt{3})$

⑤ $(2\sqrt{5} - 2)(2\sqrt{5} + 4)$

⑪ $(2\sqrt{7} + 1)(2\sqrt{7} + 6)$

⑰ $(\sqrt{5} + 1)(\sqrt{5} + 5)$

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

⑫ $(4\sqrt{3} + 1)(4\sqrt{3} - 4)$

⑱ $(3\sqrt{3} - 8)(3\sqrt{3} + 8)$

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} (2\sqrt{3} - \sqrt{7})(2\sqrt{3} + \sqrt{7}) \\ &= 12 - 7 \\ &= 5 \end{aligned}$$

$$\begin{aligned} \textcircled{2} (3 + \sqrt{10})^2 \\ &= 9 + 6\sqrt{10} + 10 \\ &= 19 + 6\sqrt{10} \end{aligned}$$

$$\begin{aligned} \textcircled{3} (3\sqrt{2} - 4)^2 \\ &= 18 - 24\sqrt{2} + 16 \\ &= 34 - 24\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{4} (\sqrt{6} + \sqrt{10})^2 \\ &= 6 + 4\sqrt{15} + 10 \\ &= 16 + 4\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{5} (2\sqrt{5} - 2)(2\sqrt{5} + 4) \\ &= 20 + 8\sqrt{5} - 4\sqrt{5} - 8 \\ &= 12 + 4\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{6} (\sqrt{5} + 3\sqrt{2})(\sqrt{5} - 3\sqrt{2}) \\ &= 5 - 18 \\ &= -13 \end{aligned}$$

$$\begin{aligned} \textcircled{7} (2\sqrt{3} + 1)(2\sqrt{3} - 1) \\ &= 12 - 1 \\ &= 11 \end{aligned}$$

$$\begin{aligned} \textcircled{8} (\sqrt{2} + 3)(\sqrt{2} - 4) \\ &= 2 - 4\sqrt{2} + 3\sqrt{2} - 12 \\ &= -10 - \sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{9} (2 - 4\sqrt{2})^2 \\ &= 4 - 16\sqrt{2} + 32 \\ &= 36 - 16\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{10} (\sqrt{7} + 7)^2 \\ &= 7 + 14\sqrt{7} + 49 \\ &= 56 + 14\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{11} (2\sqrt{7} + 1)(2\sqrt{7} + 6) \\ &= 28 + 12\sqrt{7} + 2\sqrt{7} + 6 \\ &= 34 + 14\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{12} (4\sqrt{3} + 1)(4\sqrt{3} - 4) \\ &= 48 - 16\sqrt{3} + 4\sqrt{3} - 4 \\ &= 44 - 12\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{13} (5 + \sqrt{13})(5 - \sqrt{13}) \\ &= 25 - 13 \\ &= 12 \end{aligned}$$

$$\begin{aligned} \textcircled{14} (\sqrt{6} - 2)(\sqrt{6} + 3) \\ &= 6 + 3\sqrt{6} - 2\sqrt{6} - 6 \\ &= \sqrt{6} + \sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{15} (\sqrt{3} - \sqrt{2})^2 \\ &= 3 - 2\sqrt{6} + 2 \\ &= 5 - 2\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{16} (6 - \sqrt{3})(6 + \sqrt{3}) \\ &= 36 - 3 \\ &= 33 \end{aligned}$$

$$\begin{aligned} \textcircled{17} (\sqrt{5} + 1)(\sqrt{5} + 5) \\ &= 5 + 5\sqrt{5} + \sqrt{5} + 5 \\ &= 10 + 6\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (3\sqrt{3} - 8)(3\sqrt{3} + 8) \\ &= 27 - 64 \\ &= -37 \end{aligned}$$