

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 $(2\sqrt{2} + 4)^2$

⑦ $(\sqrt{5} + \sqrt{3})^2$

⑬ $(2\sqrt{5} + 2)(2\sqrt{5} + 3)$

② $(3\sqrt{3} + 2)(3\sqrt{3} - 5)$

⑧ $(\sqrt{5} + 1)(\sqrt{5} - 3)$

⑭ $(4\sqrt{3} - 1)(4\sqrt{3} + 6)$

③ $(1 + \sqrt{10})(1 - \sqrt{10})$

⑨ $(2\sqrt{3} + 1)(2\sqrt{3} + 4)$

⑮ $(5 - 2\sqrt{7})^2$

④ $(\sqrt{7} - 7)(\sqrt{7} + 7)$

⑩ $(4\sqrt{2} + 6)(4\sqrt{2} - 6)$

⑯ $(2 - 3\sqrt{2})(2 + 3\sqrt{2})$

⑤ $(3 + \sqrt{6})^2$

⑪ $(\sqrt{3} - 2)(\sqrt{3} - 6)$

⑰ $(\sqrt{7} - 3\sqrt{2})^2$

⑥ $(\sqrt{2} - 8)^2$

⑫ $(\sqrt{2} - \sqrt{6})(\sqrt{2} + \sqrt{6})$

⑱ $(2\sqrt{2} + \sqrt{10})(2\sqrt{2} - \sqrt{10})$

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} (2\sqrt{2} + 4)^2 \\ &= 8 + 16\sqrt{2} + 16 \\ &= 24 + 16\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} (3\sqrt{3} + 2)(3\sqrt{3} - 5) \\ &= 27 - 15\sqrt{3} + 6\sqrt{3} - 10 \\ &= 17 - 9\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{3} (1 + \sqrt{10})(1 - \sqrt{10}) \\ &= 1 - 10 \\ &= -9 \end{aligned}$$

$$\begin{aligned} \textcircled{4} (\sqrt{7} - 7)(\sqrt{7} + 7) \\ &= 7 - 49 \\ &= -42 \end{aligned}$$

$$\begin{aligned} \textcircled{5} (3 + \sqrt{6})^2 \\ &= 9 + 6\sqrt{6} + 6 \\ &= 15 + 6\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{6} (\sqrt{2} - 8)^2 \\ &= 2 - 16\sqrt{2} + 64 \\ &= 66 - 16\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{7} (\sqrt{5} + \sqrt{3})^2 \\ &= 5 + 2\sqrt{15} + 3 \\ &= 8 + 2\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{8} (\sqrt{5} + 1)(\sqrt{5} - 3) \\ &= 5 - 3\sqrt{5} + \sqrt{5} - 3 \\ &= 2 - 2\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{9} (2\sqrt{3} + 1)(2\sqrt{3} + 4) \\ &= 12 + 8\sqrt{3} + 2\sqrt{3} + 4 \\ &= 16 + 10\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{10} (4\sqrt{2} + 6)(4\sqrt{2} - 6) \\ &= 32 - 36 \\ &= -4 \end{aligned}$$

$$\begin{aligned} \textcircled{11} (\sqrt{3} - 2)(\sqrt{3} - 6) \\ &= 3 - 6\sqrt{3} - 2\sqrt{3} + 12 \\ &= 15 - 8\sqrt{3} \end{aligned}$$

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

$$\begin{aligned} \textcircled{13} (2\sqrt{5} + 2)(2\sqrt{5} + 3) \\ &= 20 + 6\sqrt{5} + 4\sqrt{5} + 6 \\ &= 26 + 10\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{14} (4\sqrt{3} - 1)(4\sqrt{3} + 6) \\ &= 48 + 24\sqrt{3} - 4\sqrt{3} - 6 \\ &= 42 + 20\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{15} (5 - 2\sqrt{7})^2 \\ &= 25 - 20\sqrt{7} + 28 \\ &= 53 - 20\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{16} (2 - 3\sqrt{2})(2 + 3\sqrt{2}) \\ &= 4 - 18 \\ &= -14 \end{aligned}$$

$$\begin{aligned} \textcircled{17} (\sqrt{7} - 3\sqrt{2})^2 \\ &= 7 - 6\sqrt{14} + 18 \\ &= 25 - 6\sqrt{14} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (2\sqrt{2} + \sqrt{10})(2\sqrt{2} - \sqrt{10}) \\ &= 8 - 10 \\ &= -2 \end{aligned}$$