

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

⑦ $(7 - \sqrt{7})(7 + \sqrt{7})$

⑬ $(4\sqrt{2} - 2)(4\sqrt{2} - 3)$

② $(\sqrt{15} + 1)(\sqrt{15} - 3)$

⑧ $(\sqrt{10} - 6)(\sqrt{10} + 6)$

⑭ $(2\sqrt{7} - 8)^2$

③ $(5 + \sqrt{5})(5 - \sqrt{5})$

⑨ $(\sqrt{2} - 3)(\sqrt{2} + 4)$

⑮ $(\sqrt{2} - \sqrt{6})(\sqrt{2} + \sqrt{6})$

④ $(3 + 3\sqrt{2})^2$

⑩ $(2\sqrt{5} - \sqrt{10})^2$

⑯ $(\sqrt{7} + \sqrt{3})^2$

⑤ $(4\sqrt{3} + 1)(4\sqrt{3} - 1)$

⑪ $(2\sqrt{2} - 2)(2\sqrt{2} + 4)$

⑰ $(2\sqrt{5} + 1)(2\sqrt{5} - 4)$

⑥ $(2\sqrt{3} + 2)^2$

⑫ $(3\sqrt{3} + 2)(3\sqrt{3} + 6)$

⑱ $(4 - \sqrt{3})^2$

■ 次の式を計算しなさい。

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

$$\begin{aligned} \textcircled{2} (\sqrt{15} + 1)(\sqrt{15} - 3) \\ &= 15 - 3\sqrt{15} + \sqrt{15} - 3 \\ &= 12 - 2\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{3} (5 + \sqrt{5})(5 - \sqrt{5}) \\ &= 25 - 5 \\ &= 20 \end{aligned}$$

$$\begin{aligned} \textcircled{4} (3 + 3\sqrt{2})^2 \\ &= 9 + 18\sqrt{2} + 18 \\ &= 27 + 18\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{5} (4\sqrt{3} + 1)(4\sqrt{3} - 1) \\ &= 48 - 1 \\ &= 47 \end{aligned}$$

$$\begin{aligned} \textcircled{6} (2\sqrt{3} + 2)^2 \\ &= 12 + 8\sqrt{3} + 4 \\ &= 16 + 8\sqrt{3} \end{aligned}$$

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

$$\begin{aligned} \textcircled{8} (\sqrt{10} - 6)(\sqrt{10} + 6) \\ &= 10 - 36 \\ &= -26 \end{aligned}$$

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

$$\begin{aligned} \textcircled{10} (2\sqrt{5} - \sqrt{10})^2 \\ &= 20 - 20\sqrt{2} + 10 \\ &= 30 - 20\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{11} (2\sqrt{2} - 2)(2\sqrt{2} + 4) \\ &= 8 + 8\sqrt{2} - 4\sqrt{2} - 8 \\ &= 4\sqrt{2} + 4\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{12} (3\sqrt{3} + 2)(3\sqrt{3} + 6) \\ &= 27 + 18\sqrt{3} + 6\sqrt{3} + 12 \\ &= 39 + 24\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{13} (4\sqrt{2} - 2)(4\sqrt{2} - 3) \\ &= 32 - 12\sqrt{2} - 8\sqrt{2} + 6 \\ &= 38 - 20\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{14} (2\sqrt{7} - 8)^2 \\ &= 28 - 32\sqrt{7} + 64 \\ &= 92 - 32\sqrt{7} \end{aligned}$$

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

$$\begin{aligned} \textcircled{16} (\sqrt{7} + \sqrt{3})^2 \\ &= 7 + 2\sqrt{21} + 3 \\ &= 10 + 2\sqrt{21} \end{aligned}$$

$$\begin{aligned} \textcircled{17} (2\sqrt{5} + 1)(2\sqrt{5} - 4) \\ &= 20 - 8\sqrt{5} + 2\sqrt{5} - 4 \\ &= 16 - 6\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (4 - \sqrt{3})^2 \\ &= 16 - 8\sqrt{3} + 3 \\ &= 19 - 8\sqrt{3} \end{aligned}$$