

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

⑦  $(\sqrt{2} + \sqrt{5})^2$

⑬  $(3 + 2\sqrt{7})^2$

②  $(8 - 3\sqrt{2})^2$

⑧  $(\sqrt{10} + 1)(\sqrt{10} + 4)$

⑭  $(\sqrt{7} - 4)(\sqrt{7} + 4)$

③  $(4\sqrt{3} - 2)(4\sqrt{3} + 5)$

⑨  $(\sqrt{3} - 6)^2$

⑮  $(\sqrt{2} + 5)(\sqrt{2} - 5)$

④  $(2\sqrt{5} + 1)(2\sqrt{5} - 3)$

⑩  $(1 - 2\sqrt{2})(1 + 2\sqrt{2})$

⑯  $(\sqrt{5} + 1)(\sqrt{5} + 2)$

⑤  $(3\sqrt{3} + 7)^2$

⑪  $(\sqrt{13} - 2)(\sqrt{13} - 3)$

⑰  $(\sqrt{10} + \sqrt{3})(\sqrt{10} - \sqrt{3})$

⑥  $(2 + 2\sqrt{3})(2 - 2\sqrt{3})$

⑫  $(2\sqrt{3} - \sqrt{6})^2$

⑱  $(\sqrt{15} + 1)(\sqrt{15} - 6)$

■ 次の式を計算しなさい。

$$\begin{aligned}\textcircled{1} (\sqrt{7} - 2\sqrt{2})(\sqrt{7} + 2\sqrt{2}) \\ &= 7 - 8 \\ &= -1\end{aligned}$$

$$\begin{aligned}\textcircled{2} (8 - 3\sqrt{2})^2 \\ &= 64 - 48\sqrt{2} + 18 \\ &= 82 - 48\sqrt{2}\end{aligned}$$

$$\begin{aligned}\textcircled{3} (4\sqrt{3} - 2)(4\sqrt{3} + 5) \\ &= 48 + 20\sqrt{3} - 8\sqrt{3} - 10 \\ &= 38 + 12\sqrt{3}\end{aligned}$$

$$\begin{aligned}\textcircled{4} (2\sqrt{5} + 1)(2\sqrt{5} - 3) \\ &= 20 - 6\sqrt{5} + 2\sqrt{5} - 3 \\ &= 17 - 4\sqrt{5}\end{aligned}$$

$$\begin{aligned}\textcircled{5} (3\sqrt{3} + 7)^2 \\ &= 27 + 42\sqrt{3} + 49 \\ &= 76 + 42\sqrt{3}\end{aligned}$$

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

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

$$\begin{aligned}\textcircled{8} (\sqrt{10} + 1)(\sqrt{10} + 4) \\ &= 10 + 4\sqrt{10} + \sqrt{10} + 4 \\ &= 14 + 5\sqrt{10}\end{aligned}$$

$$\begin{aligned}\textcircled{9} (\sqrt{3} - 6)^2 \\ &= 3 - 12\sqrt{3} + 36 \\ &= 39 - 12\sqrt{3}\end{aligned}$$

$$\begin{aligned}\textcircled{10} (1 - 2\sqrt{2})(1 + 2\sqrt{2}) \\ &= 1 - 8 \\ &= -7\end{aligned}$$

$$\begin{aligned}\textcircled{11} (\sqrt{13} - 2)(\sqrt{13} - 3) \\ &= 13 - 3\sqrt{13} - 2\sqrt{13} + 6 \\ &= 19 - 5\sqrt{13}\end{aligned}$$

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

$$\begin{aligned}\textcircled{13} (3 + 2\sqrt{7})^2 \\ &= 9 + 12\sqrt{7} + 28 \\ &= 37 + 12\sqrt{7}\end{aligned}$$

$$\begin{aligned}\textcircled{14} (\sqrt{7} - 4)(\sqrt{7} + 4) \\ &= 7 - 16 \\ &= -9\end{aligned}$$

$$\begin{aligned}\textcircled{15} (\sqrt{2} + 5)(\sqrt{2} - 5) \\ &= 2 - 25 \\ &= -23\end{aligned}$$

$$\begin{aligned}\textcircled{16} (\sqrt{5} + 1)(\sqrt{5} + 2) \\ &= 5 + 2\sqrt{5} + \sqrt{5} + 2 \\ &= 7 + 3\sqrt{5}\end{aligned}$$

$$\begin{aligned}\textcircled{17} (\sqrt{10} + \sqrt{3})(\sqrt{10} - \sqrt{3}) \\ &= 10 - 3 \\ &= 7\end{aligned}$$

$$\begin{aligned}\textcircled{18} (\sqrt{15} + 1)(\sqrt{15} - 6) \\ &= 15 - 6\sqrt{15} + \sqrt{15} - 6 \\ &= 9 - 5\sqrt{15}\end{aligned}$$