

# 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  $(3\sqrt{2} + 8)(3\sqrt{2} - 8)$

⑦  $(4\sqrt{3} - 2)(4\sqrt{3} - 4)$

⑬  $(2\sqrt{5} - 3)(2\sqrt{5} + 4)$

②  $(\sqrt{3} - 5)(\sqrt{3} + 5)$

⑧  $(2\sqrt{2} + \sqrt{7})(2\sqrt{2} - \sqrt{7})$

⑭  $(\sqrt{10} - 2)(\sqrt{10} + 6)$

③  $(\sqrt{7} + 1)^2$

⑨  $(\sqrt{2} + 1)(\sqrt{2} + 4)$

⑮  $(\sqrt{15} + 1)(\sqrt{15} + 5)$

④  $(6 - 2\sqrt{3})^2$

⑩  $(\sqrt{10} - \sqrt{6})(\sqrt{10} + \sqrt{6})$

⑯  $(7 - 3\sqrt{3})(7 + 3\sqrt{3})$

⑤  $(\sqrt{2} + \sqrt{5})^2$

⑪  $(2 + 2\sqrt{7})^2$

⑰  $(\sqrt{3} - 3\sqrt{2})^2$

⑥  $(\sqrt{5} + 1)(\sqrt{5} - 3)$

⑫  $(\sqrt{13} + 2)(\sqrt{13} - 5)$

⑱  $(\sqrt{6} - 4)^2$

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} (3\sqrt{2} + 8)(3\sqrt{2} - 8) \\ &= 18 - 64 \\ &= -46 \end{aligned}$$

$$\begin{aligned} \textcircled{2} (\sqrt{3} - 5)(\sqrt{3} + 5) \\ &= 3 - 25 \\ &= -22 \end{aligned}$$

$$\begin{aligned} \textcircled{3} (\sqrt{7} + 1)^2 \\ &= 7 + 2\sqrt{7} + 1 \\ &= 8 + 2\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{4} (6 - 2\sqrt{3})^2 \\ &= 36 - 24\sqrt{3} + 12 \\ &= 48 - 24\sqrt{3} \end{aligned}$$

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

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

$$\begin{aligned} \textcircled{7} (4\sqrt{3} - 2)(4\sqrt{3} - 4) \\ &= 48 - 16\sqrt{3} - 8\sqrt{3} + 8 \\ &= 56 - 24\sqrt{3} \end{aligned}$$

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

$$\begin{aligned} \textcircled{9} (\sqrt{2} + 1)(\sqrt{2} + 4) \\ &= 2 + 4\sqrt{2} + \sqrt{2} + 4 \\ &= 6 + 5\sqrt{2} \end{aligned}$$

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

$$\begin{aligned} \textcircled{11} (2 + 2\sqrt{7})^2 \\ &= 4 + 8\sqrt{7} + 28 \\ &= 32 + 8\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{12} (\sqrt{13} + 2)(\sqrt{13} - 5) \\ &= 13 - 5\sqrt{13} + 2\sqrt{13} - 10 \\ &= 3 - 3\sqrt{13} \end{aligned}$$

$$\begin{aligned} \textcircled{13} (2\sqrt{5} - 3)(2\sqrt{5} + 4) \\ &= 20 + 8\sqrt{5} - 6\sqrt{5} - 12 \\ &= 8 + 2\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{14} (\sqrt{10} - 2)(\sqrt{10} + 6) \\ &= 10 + 6\sqrt{10} - 2\sqrt{10} - 12 \\ &= -2 + 4\sqrt{10} \end{aligned}$$

$$\begin{aligned} \textcircled{15} (\sqrt{15} + 1)(\sqrt{15} + 5) \\ &= 15 + 5\sqrt{15} + \sqrt{15} + 5 \\ &= 20 + 6\sqrt{15} \end{aligned}$$

$$\begin{aligned} \textcircled{16} (7 - 3\sqrt{3})(7 + 3\sqrt{3}) \\ &= 49 - 27 \\ &= 22 \end{aligned}$$

$$\begin{aligned} \textcircled{17} (\sqrt{3} - 3\sqrt{2})^2 \\ &= 3 - 6\sqrt{6} + 18 \\ &= 21 - 6\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (\sqrt{6} - 4)^2 \\ &= 6 - 8\sqrt{6} + 16 \\ &= 22 - 8\sqrt{6} \end{aligned}$$