

# 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  $(\sqrt{10}-1)(\sqrt{10}+1)$

⑦  $(2+4\sqrt{3})^2$

⑬  $(\sqrt{3}+1)(\sqrt{3}+6)$

②  $(\sqrt{2}+\sqrt{7})^2$

⑧  $(\sqrt{15}+2)(\sqrt{15}-3)$

⑭  $(3-2\sqrt{3})(3+2\sqrt{3})$

③  $(3\sqrt{3}+2)(3\sqrt{3}+5)$

⑨  $(\sqrt{6}+\sqrt{5})(\sqrt{6}-\sqrt{5})$

⑮  $(\sqrt{5}+7)^2$

④  $(6+2\sqrt{2})(6-2\sqrt{2})$

⑩  $(2\sqrt{2}-\sqrt{3})^2$

⑯  $(2\sqrt{7}-3)(2\sqrt{7}+4)$

⑤  $(\sqrt{13}+1)(\sqrt{13}-2)$

⑪  $(\sqrt{6}-1)(\sqrt{6}+3)$

⑰  $(4-\sqrt{2})^2$

⑥  $(\sqrt{10}-3\sqrt{2})(\sqrt{10}+3\sqrt{2})$

⑫  $(\sqrt{7}-1)(\sqrt{7}-4)$

⑱  $(2\sqrt{5}+8)(2\sqrt{5}-8)$

■ 次の式を計算しなさい。

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

$$\begin{aligned} \textcircled{2} (\sqrt{2}+\sqrt{7})^2 \\ &= 2+2\sqrt{14}+7 \\ &= 9+2\sqrt{14} \end{aligned}$$

$$\begin{aligned} \textcircled{3} (3\sqrt{3}+2)(3\sqrt{3}+5) \\ &= 27+15\sqrt{3}+6\sqrt{3}+10 \\ &= 37+21\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{4} (6+2\sqrt{2})(6-2\sqrt{2}) \\ &= 36-8 \\ &= 28 \end{aligned}$$

$$\begin{aligned} \textcircled{5} (\sqrt{13}+1)(\sqrt{13}-2) \\ &= 13-2\sqrt{13}+\sqrt{13}-2 \\ &= 11-\sqrt{13} \end{aligned}$$

$$\begin{aligned} \textcircled{6} (\sqrt{10}-3\sqrt{2})(\sqrt{10}+3\sqrt{2}) \\ &= 10-18 \\ &= -8 \end{aligned}$$

$$\begin{aligned} \textcircled{7} (2+4\sqrt{3})^2 \\ &= 4+16\sqrt{3}+48 \\ &= 52+16\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{8} (\sqrt{15}+2)(\sqrt{15}-3) \\ &= 15-3\sqrt{15}+2\sqrt{15}-6 \\ &= 9-\sqrt{15} \end{aligned}$$

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

$$\begin{aligned} \textcircled{10} (2\sqrt{2}-\sqrt{3})^2 \\ &= 8-4\sqrt{6}+3 \\ &= 11-4\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{11} (\sqrt{6}-1)(\sqrt{6}+3) \\ &= 6+3\sqrt{6}-\sqrt{6}-3 \\ &= 3+2\sqrt{6} \end{aligned}$$

$$\begin{aligned} \textcircled{12} (\sqrt{7}-1)(\sqrt{7}-4) \\ &= 7-4\sqrt{7}-\sqrt{7}+4 \\ &= 11-5\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{13} (\sqrt{3}+1)(\sqrt{3}+6) \\ &= 3+6\sqrt{3}+\sqrt{3}+6 \\ &= 9+7\sqrt{3} \end{aligned}$$

$$\begin{aligned} \textcircled{14} (3-2\sqrt{3})(3+2\sqrt{3}) \\ &= 9-12 \\ &= -3 \end{aligned}$$

$$\begin{aligned} \textcircled{15} (\sqrt{5}+7)^2 \\ &= 5+14\sqrt{5}+49 \\ &= 54+14\sqrt{5} \end{aligned}$$

$$\begin{aligned} \textcircled{16} (2\sqrt{7}-3)(2\sqrt{7}+4) \\ &= 28+8\sqrt{7}-6\sqrt{7}-12 \\ &= 16+2\sqrt{7} \end{aligned}$$

$$\begin{aligned} \textcircled{17} (4-\sqrt{2})^2 \\ &= 16-8\sqrt{2}+2 \\ &= 18-8\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{18} (2\sqrt{5}+8)(2\sqrt{5}-8) \\ &= 20-64 \\ &= -44 \end{aligned}$$