

■ 次の式を計算しなさい。

① $(18xy - 9y^2 + 72y) \div 9y$

② $4a(8a - 5b + 9)$

■ 次の式を展開しなさい。

③ $(x + 7)(x - 6)$

④ $(a - 4)(8 - a)$

⑤ $(6 + a)(x + 7)$

⑥ $(x + 11)^2$

⑦ $(x + 12)(x - 12)$

■ 次の式を因数分解しなさい。

⑧ $m^2 + 15m + 54$

⑨ $49m^2 - 25n^2$

⑩ $x^2 + 18x + 81$

⑪ $2t^2 + 28t + 98$

■ 次の式を展開しなさい。

⑫ $(5a - 3)(2x - 3y + 1)$

⑬ $(x + y - z)(x + y + z)$

⑭ $(a - b + 2)^2$

■ 次の値を、因数分解や式の展開の考え方をを用いて求めなさい。

⑮ $78^2 - 18^2$

⑯ 98^2

⑰ 44×56

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} \quad (18xy - 9y^2 + 72y) \div 9y \\ = 2x - y + 8 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 4a(8a - 5b + 9) \\ = 32a^2 - 20ab + 36a \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{3} \quad (x+7)(x-6) \\ = x^2 + x - 42 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad (a-4)(8-a) \\ = -a^2 + 12a - 32 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad (6+a)(x+7) \\ = 6x + 42 + ax + 7a \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad (x+11)^2 \\ = x^2 + 22x + 121 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad (x+12)(x-12) \\ = x^2 - 144 \end{aligned}$$

■ 次の式を因数分解しなさい。

$$\begin{aligned} \textcircled{8} \quad m^2 + 15m + 54 \\ = (m+6)(m+9) \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad 49m^2 - 25n^2 \\ = (7m+5n)(7m-5n) \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad x^2 + 18x + 81 \\ = (x+9)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad 2t^2 + 28t + 98 \\ = 2(t^2 + 14t + 49) \\ = 2(t+7)^2 \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{12} \quad (5a-3)(2x-3y+1) \\ = 10ax - 15ay + 5a - 6x + 9y - 3 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad (x+y-z)(x+y+z) \\ x+y = A \text{とおくと} \\ (A-z)(A+z) \\ = A^2 - z^2 \\ = (x+y)^2 - z^2 \\ = x^2 + 2xy + y^2 - z^2 \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad (a-b+2)^2 \\ a-b = X \text{とおくと} \\ (X+2)^2 \\ = X^2 + 4X + 4 \\ = (a-b)^2 + 4(a-b) + 4 \\ = a^2 - 2ab + b^2 + 4a - 4b + 4 \end{aligned}$$

■ 次の値を、因数分解や式の展開の考え方をを用いて求めなさい。

$$\begin{aligned} \textcircled{15} \quad 78^2 - 18^2 \\ = (78+18) \times (78-18) \\ = 96 \times 60 \\ = 5760 \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad 98^2 \\ = (100-2)^2 \\ = 10000 - 400 + 4 \\ = 9604 \end{aligned}$$

$$\begin{aligned} \textcircled{17} \quad 44 \times 56 \\ = (50-6) \times (50+6) \\ = 50^2 - 6^2 \\ = 2500 - 36 \\ = 2464 \end{aligned}$$