

■ 次の式を計算しなさい。

① $(45xy + 54y^2) \div 9y$

② $(4a - b) \times (-7a)$

■ 次の式を展開しなさい。

③ $(x + 8)^2$

④ $(3a - 4)(5a + 4)$

⑤ $(5s - 9t)(5s + 9t)$

⑥ $(5 + a)(b + 4)$

⑦ $(b + 7)(b + 1)$

■ 次の式を因数分解しなさい。

⑧ $s^2 + 8s - 20$

⑨ $y^2 - 400$

⑩ $s^2 - 4s + 4$

⑪ $-9m^2 + 90m - 81$

■ 次の式を展開しなさい。

⑫ $(2x - 3)(3y + x + 3)$

⑬ $(x - y - 2)^2$

⑭ $(a + b + 5)(a + b + 1)$

■ 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 48×52

⑯ $61^2 - 21^2$

⑰ 94^2

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} \quad (45xy + 54y^2) \div 9y \\ = 5x + 6y \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad (4a - b) \times (-7a) \\ = -28a^2 + 7ab \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{3} \quad (x + 8)^2 \\ = x^2 + 16x + 64 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad (3a - 4)(5a + 4) \\ = 15a^2 - 8a - 16 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad (5s - 9t)(5s + 9t) \\ = 25s^2 - 81t^2 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad (5 + a)(b + 4) \\ = 5b + 20 + ab + 4a \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad (b + 7)(b + 1) \\ = b^2 + 8b + 7 \end{aligned}$$

■ 次の式を因数分解しなさい。

$$\begin{aligned} \textcircled{8} \quad s^2 + 8s - 20 \\ = (s + 10)(s - 2) \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad y^2 - 400 \\ = (y - 20)(y + 20) \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad s^2 - 4s + 4 \\ = (s - 2)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad -9m^2 + 90m - 81 \\ = -9(m^2 - 10m + 9) \\ = -9(m - 1)(m - 9) \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{12} \quad (2x - 3)(3y + x + 3) \\ = 2x^2 + 6xy + 3x - 9y - 9 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad (x - y - 2)^2 \\ x - y = A \text{ とおくと} \\ (A - 2)^2 \\ = A^2 - 4A + 4 \\ = (x - y)^2 - 4(x - y) + 4 \\ = x^2 - 2xy + y^2 - 4x + 4y + 4 \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad (a + b + 5)(a + b + 1) \\ a + b = X \text{ とおくと} \\ (X + 5)(X + 1) \\ = X^2 + 6X + 5 \\ = (a + b)^2 + 6(a + b) + 5 \\ = a^2 + 2ab + b^2 + 6a + 6b + 5 \end{aligned}$$

■ 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。

$$\begin{aligned} \textcircled{15} \quad 48 \times 52 \\ = (50 - 2) \times (50 + 2) \\ = 50^2 - 2^2 \\ = 2500 - 4 \\ = 2496 \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad 61^2 - 21^2 \\ = (61 + 21) \times (61 - 21) \\ = 82 \times 40 \\ = 3280 \end{aligned}$$

$$\begin{aligned} \textcircled{17} \quad 94^2 \\ = (90 + 4)^2 \\ = 8100 + 720 + 16 \\ = 8836 \end{aligned}$$