

■ 次の式を計算しなさい。

①  $(-10xy-5y^2) \div (-5y)$

②  $6x(6x+y)$

■ 次の式を展開しなさい。

③  $(a+9)(4+a)$

④  $(x+6)^2$

⑤  $(a+4x)(b+5y)$

⑥  $(x-1)(x-6)$

⑦  $(4x-3y)(4x+3y)$

■ 次の式を因数分解しなさい。

⑧  $x^2+22x+121$

⑨  $m^2+5m-24$

⑩  $4m^2-25$

⑪  $-6x^2+6$

■ 次の式を展開しなさい。

⑫  $(2a-5b)(3a+2b-2)$

⑬  $(s-t+8)(s-t-8)$

⑭  $(a+b+c)^2$

■ 次の値を、因数分解や式の展開の考え方をういて求めなさい。

⑮  $13 \times 27$

⑯  $31^2-21^2$

⑰  $32^2$

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} \quad & (-10xy - 5y^2) \div (-5y) \\ & = 2x + y \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad & 6x(6x + y) \\ & = 36x^2 + 6xy \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{3} \quad & (a + 9)(4 + a) \\ & = a^2 + 13a + 36 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad & (x + 6)^2 \\ & = x^2 + 12x + 36 \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad & (a + 4x)(b + 5y) \\ & = ab + 5ay + 4bx + 20xy \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad & (x - 1)(x - 6) \\ & = x^2 - 7x + 6 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad & (4x - 3y)(4x + 3y) \\ & = 16x^2 - 9y^2 \end{aligned}$$

■ 次の式を因数分解しなさい。

$$\begin{aligned} \textcircled{8} \quad & x^2 + 22x + 121 \\ & = (x + 11)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad & m^2 + 5m - 24 \\ & = (m + 8)(m - 3) \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad & 4m^2 - 25 \\ & = (2m + 5)(2m - 5) \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad & -6x^2 + 6 \\ & = -6(x^2 - 1) \\ & = -6(x + 1)(x - 1) \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{12} \quad & (2a - 5b)(3a + 2b - 2) \\ & = 6a^2 - 6ab - 4a - 10b^2 + 10b \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad & (s - t + 8)(s - t - 8) \\ & \quad s - t = X \text{とおくと} \\ & \quad (X + 8)(X - 8) \\ & = X^2 - 64 \\ & = (s - t)^2 - 64 \\ & = s^2 - 2st + t^2 - 64 \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad & (a + b + c)^2 \\ & \quad a + b = X \text{とおくと} \\ & \quad (X + c)^2 \\ & = X^2 + 2cX + c^2 \\ & = (a + b)^2 + 2c(a + b) + c^2 \\ & = a^2 + 2ab + b^2 + 2ac + 2bc + c^2 \end{aligned}$$

■ 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。

$$\begin{aligned} \textcircled{15} \quad & 13 \times 27 \\ & = (20 - 7) \times (20 + 7) \\ & = 20^2 - 7^2 \\ & = 400 - 49 \\ & = 351 \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad & 31^2 - 21^2 \\ & = (31 + 21) \times (31 - 21) \\ & = 52 \times 10 \\ & = 520 \end{aligned}$$

$$\begin{aligned} \textcircled{17} \quad & 32^2 \\ & = (30 + 2)^2 \\ & = 900 + 120 + 4 \\ & = 1024 \end{aligned}$$