

展開・因数分解のまとめ

____年 ____組 名前

/17

■ 次の式を計算しなさい。

① $(7x-4z+7) \times 3y$

② $(-72a^2+63ab+45ac) \div (-9a)$

■ 次の式を展開しなさい。

③ $(x+3)(5-x)$

④ $(b+1)(b+4)$

⑤ $(y+8)^2$

⑥ $(a+2)(x-3)$

⑦ $(x+6y)(x-6y)$

■ 次の式を因数分解しなさい。

⑧ $x^2-14x+40$

⑨ $81-x^2$

⑩ $a^2-40a+400$

⑪ $2a^2+30a+112$

■ 次の式を展開しなさい。

⑫ $(x+1)(x+3y-3)$

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ういて求めなさい。

⑮ 53^2

⑯ 39×41

⑰ 36^2-16^2

■ 次の式を計算しなさい。

$$\begin{aligned} \textcircled{1} (7x-4z+7) \times 3y \\ = 21xy-12yz+21y \end{aligned}$$

$$\begin{aligned} \textcircled{2} (-72a^2+63ab+45ac) \div (-9a) \\ = 8a-7b-5c \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{3} (x+3)(5-x) \\ = -x^2+2x+15 \end{aligned}$$

$$\begin{aligned} \textcircled{4} (b+1)(b+4) \\ = b^2+5b+4 \end{aligned}$$

$$\begin{aligned} \textcircled{5} (y+8)^2 \\ = y^2+16y+64 \end{aligned}$$

$$\begin{aligned} \textcircled{6} (a+2)(x-3) \\ = ax-3a+2x-6 \end{aligned}$$

$$\begin{aligned} \textcircled{7} (x+6y)(x-6y) \\ = x^2-36y^2 \end{aligned}$$

■ 次の式を因数分解しなさい。

$$\begin{aligned} \textcircled{8} x^2-14x+40 \\ = (x-10)(x-4) \end{aligned}$$

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

$$\begin{aligned} \textcircled{10} a^2-40a+400 \\ = (a-20)^2 \end{aligned}$$

$$\begin{aligned} \textcircled{11} 2a^2+30a+112 \\ = 2(a^2+15a+56) \\ = 2(a+7)(a+8) \end{aligned}$$

■ 次の式を展開しなさい。

$$\begin{aligned} \textcircled{12} (x+1)(x+3y-3) \\ = x^2+3xy-2x+3y-3 \end{aligned}$$

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

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

■ 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。

$$\begin{aligned} \textcircled{15} 53^2 \\ = (50+3)^2 \\ = 2500+300+9 \\ = 2809 \end{aligned}$$

$$\begin{aligned} \textcircled{16} 39 \times 41 \\ = (40-1) \times (40+1) \\ = 40^2-1^2 \\ = 1600-1 \\ = 1599 \end{aligned}$$

$$\begin{aligned} \textcircled{17} 36^2-16^2 \\ = (36+16) \times (36-16) \\ = 52 \times 20 \\ = 1040 \end{aligned}$$