

__組__番 氏名__

<いろいろな式の展開3>

問1 次の式を展開しなさい。

$$\begin{aligned}
 \textcircled{1} \quad & \underbrace{(a+b+3)}_A \underbrace{(a+b-3)}_A \\
 &= (A+3)(A-3) \\
 &= A^2 - 9 \\
 &= (a+b)^2 - 9 \\
 &= a^2 + 2ab + b^2 - 9
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{2} \quad & \underbrace{(a-b-5)}_A \underbrace{(a-b+5)}_A \\
 &= (A-5)(A+5) \\
 &= A^2 - 25 \\
 &= (a-b)^2 - 25 \\
 &= a^2 - 2ab + b^2 - 25
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{3} \quad & \underbrace{(x-y+3)}_A \underbrace{(x-y-1)}_A \\
 &= (A+3)(A-1) \\
 &= A^2 + 2A - 3 \\
 &= (x-y)^2 + 2(x-y) - 3 \\
 &= x^2 - 2xy + y^2 + 2x - 2y - 3
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{4} \quad & \underbrace{(x+y+3)}_A \underbrace{(x+y+5)}_A \\
 &= (A+3)(A+5) \\
 &= A^2 + 8A + 15 \\
 &= (x+y)^2 + 8(x+y) + 15 \\
 &= x^2 + 2xy + y^2 + 8x + 8y + 15
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{5} \quad & \underbrace{(a+b-1)}_A^2 \\
 &= (A-1)^2 \\
 &= A^2 - 2A + 1 \\
 &= (a+b)^2 - 2(a+b) + 1 \\
 &= a^2 + 2ab + b^2 - 2a - 2b + 1
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{6} \quad & \underbrace{(a-b+3)}_A^2 \\
 &= (A+3)^2 \\
 &= A^2 + 6A + 9 \\
 &= (a-b)^2 + 6(a-b) + 9 \\
 &= a^2 - 2ab + b^2 + 6a - 6b + 9
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{7} \quad & \underbrace{(a+b+c)}_A^2 \\
 &= (A+c)^2 \\
 &= A^2 + 2Ac + c^2 \\
 &= (a+b)^2 + 2(a+b)c + c^2 \\
 &= a^2 + 2ab + b^2 \\
 &\quad + 2ac + 2bc + c^2
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{8} \quad & \underbrace{(a+b+c+d)}_A \underbrace{(a+b+c+d)}_B^2 \\
 &= (A+B)^2 \\
 &= A^2 + 2AB + B^2 \\
 &= (a+b)^2 + 2(a+b)(c+d) + (c+d)^2 \\
 &= a^2 + 2ab + b^2 + 2ac + 2ad + 2bc + 2bd \\
 &\quad + c^2 + 2cd + d^2
 \end{aligned}$$