

式の展開

年 組 名前

/12

■ 次の式を計算しなさい。

① $-2(x-3y)(x+3y)+(x+3y)(x+9y)$

② $6(7a-3)+(a+9)(a-9)$

③ $-(a+5)(a-5)+(a-4)(a-9)$

④ $-(a-8b)^2+(a-6b)(a+2b)$

⑤ $9x(x-6)+(x+6)(x-4)$

⑥ $-3(-9x+8)+(x+7)(x+3)$

⑦ $(a+5)(a+8)-(a+9)^2$

⑧ $-4(a-3)(a+6)+(a-2)(a+3)$

⑨ $(x+4y)(x-5y)-2(x+5y)^2$

⑩ $(x+8)(x-5)-2(7+9x)$

⑪ $(a+5)(a-8)+(a-7)(a+4)$

⑫ $(x-6)(x+5)+(x-7)(x-9)$

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■ 次の式を計算しなさい。

$$\begin{aligned}\textcircled{1} & -2(x-3y)(x+3y)+(x+3y)(x+9y) \\ & = -2(x^2-9y^2)+(x^2+12xy+27y^2) \\ & = -2x^2+18y^2+x^2+12xy+27y^2 \\ & = -x^2+12xy+45y^2\end{aligned}$$

$$\begin{aligned}\textcircled{2} & 6(7a-3)+(a+9)(a-9) \\ & = 6(7a-3)+(a^2-81) \\ & = 42a-18+a^2-81 \\ & = a^2+42a-99\end{aligned}$$

$$\begin{aligned}\textcircled{3} & -(a+5)(a-5)+(a-4)(a-9) \\ & = -(a^2-25)+(a^2-13a+36) \\ & = -a^2+25+a^2-13a+36 \\ & = -13a+61\end{aligned}$$

$$\begin{aligned}\textcircled{4} & -(a-8b)^2+(a-6b)(a+2b) \\ & = -(a^2-16ab+64b^2)+(a^2-4ab-12b^2) \\ & = -a^2+16ab-64b^2+a^2-4ab-12b^2 \\ & = 12ab-76b^2\end{aligned}$$

$$\begin{aligned}\textcircled{5} & 9x(x-6)+(x+6)(x-4) \\ & = 9(x^2-6x)+(x^2+2x-24) \\ & = 9x^2-54x+x^2+2x-24 \\ & = 10x^2-52x-24\end{aligned}$$

$$\begin{aligned}\textcircled{6} & -3(-9x+8)+(x+7)(x+3) \\ & = -3(-9x+8)+(x^2+10x+21) \\ & = 27x-24+x^2+10x+21 \\ & = x^2+37x-3\end{aligned}$$

$$\begin{aligned}\textcircled{7} & (a+5)(a+8)-(a+9)^2 \\ & = (a^2+13a+40)-(a^2+18a+81) \\ & = a^2+13a+40-a^2-18a-81 \\ & = -5a-41\end{aligned}$$

$$\begin{aligned}\textcircled{8} & -4(a-3)(a+6)+(a-2)(a+3) \\ & = -4(a^2+3a-18)+(a^2+a-6) \\ & = -4a^2-12a+72+a^2+a-6 \\ & = -3a^2-11a+66\end{aligned}$$

$$\begin{aligned}\textcircled{9} & (x+4y)(x-5y)-2(x+5y)^2 \\ & = (x^2-xy-20y^2)-2(x^2+10xy+25y^2) \\ & = x^2-xy-20y^2-2x^2-20xy-50y^2 \\ & = -x^2-21xy-70y^2\end{aligned}$$

$$\begin{aligned}\textcircled{10} & (x+8)(x-5)-2(7+9x) \\ & = (x^2+3x-40)-2(7+9x) \\ & = x^2+3x-40-14-18x \\ & = x^2-15x-54\end{aligned}$$

$$\begin{aligned}\textcircled{11} & (a+5)(a-8)+(a-7)(a+4) \\ & = (a^2-3a-40)+(a^2-3a-28) \\ & = a^2-3a-40+a^2-3a-28 \\ & = 2a^2-6a-68\end{aligned}$$

$$\begin{aligned}\textcircled{12} & (x-6)(x+5)+(x-7)(x-9) \\ & = (x^2-x-30)+(x^2-16x+63) \\ & = x^2-x-30+x^2-16x+63 \\ & = 2x^2-17x+33\end{aligned}$$