

## 展開の応用

**例題** 次の計算をせよ。

(1)  $(a+6)(a-6)+(a+2)(a-5)$

(2)  $2(x+3)^2-3(x-4)(x+4)$

(3)  $(3x+3y)^2-(3x+y)(3x-y)$

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**練習** 次の計算をせよ。

(1)  $x^2-(x-6)(x+2)$

答

(2)  $(a+3)(a-9)-a(a+2)$

答

(3)  $(a-6)(a-7)+(a+3)^2$

答

(4)  $(x+1)^2+(x+2)(x-2)$

答

**展開の応用****例題** 次の計算をせよ。

(1)  $(a+6)(a-6)+(a+2)(a-5)$

★

$$\begin{aligned} &(a+6)(a-6)+(a+2)(a-5) \\ &=a^2-36+a^2-3a-10 \\ &=2a^2-3a-46 \end{aligned}$$

答	$2a^2-3a-46$
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(2)  $2(x+3)^2-3(x-4)(x+4)$

★

$$\begin{aligned} &2(x+3)^2-3(x-4)(x+4) \\ &=2(x^2+6x+9)-3(x^2-16) \\ &=2x^2+12x+18-3x^2+48 \\ &=-x^2+12x+66 \end{aligned}$$

答	$-x^2+12x+66$
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(3)  $(3x+3y)^2-(3x+y)(3x-y)$

★

$$\begin{aligned} &(3x+3y)^2-(3x+y)(3x-y) \\ &=9x^2+18xy+9y^2-(9x^2-y^2) \\ &=9x^2+18xy+9y^2-9x^2+y^2 \\ &=18xy+10y^2 \end{aligned}$$

答	$18xy+10y^2$
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**練習** 次の計算をせよ。

(1)  $x^2-(x-6)(x+2)$

★

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

答	$4x+12$
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(2)  $(a+3)(a-9)-a(a+2)$

★

$$\begin{aligned} &(a+3)(a-9)-a(a+2) \\ &=a^2-6a-27-a^2-2a \\ &=-8a-27 \end{aligned}$$

答	$-8a-27$
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(3)  $(a-6)(a-7)+(a+3)^2$

★

$$\begin{aligned} &(a-6)(a-7)+(a+3)^2 \\ &=a^2-13a+42+a^2+6a+9 \\ &=2a^2-7a+51 \end{aligned}$$

答	$2a^2-7a+51$
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(4)  $(x+1)^2+(x+2)(x-2)$

★

$$\begin{aligned} &(x+1)^2+(x+2)(x-2) \\ &=x^2+2x+1+x^2-4 \\ &=2x^2+2x-3 \end{aligned}$$

答	$2x^2+2x-3$
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