

6 《数学 3年生：乗法公式(1)》

展開のしかた(1)

$$\begin{aligned} & (x+2)(x+4) \\ &= x^2 + (2+4)x + 2 \times 4 \\ &= x^2 + 6x + 8 \end{aligned}$$

$$\begin{aligned} & (x+a)(x+b) \\ &= x^2 + (a+b)x + ab \\ & \text{にあてはめる。} \end{aligned}$$

【問1】 次の式を展開しなさい。

①  $(x+1)(x+4)$

②  $(x-3)(x-5)$

③  $(x+6)(x+2)$

④  $(a-7)(a-2)$

⑤  $(x + \frac{1}{4})(x + \frac{3}{4})$

展開のしかた(2)

$$\begin{aligned} & (x+4)(x-8) \\ &= x^2 + (4-8)x + 4 \times (-8) \\ &= x^2 - 4x - 12 \end{aligned}$$

$$4 + (-8) = 4 - 8$$

【問2】 次の式を展開しなさい。

①  $(x+3)(x-7)$

②  $(x-5)(x+2)$

③  $(x+2)(x-9)$

④  $(x-4)(x+3)$

⑤  $(x + \frac{1}{2})(x - \frac{1}{3})$

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展開のしかた(1)

$$\begin{aligned} & (x+2)(x+4) \\ = & x^2 + (2+4)x + 2 \times 4 \\ = & x^2 + 6x + 8 \end{aligned}$$

$$\begin{aligned} & (x+a)(x+b) \\ = & x^2 + (a+b)x + ab \\ & \text{にあてはめる。} \end{aligned}$$

【問1】 次の式を展開しなさい。

①  $(x+1)(x+4)$

$$\begin{aligned} & = x^2 + (1+4)x + 1 \times 4 \\ & = x^2 + 5x + 4 \end{aligned}$$

②  $(x-3)(x-5)$

$$\begin{aligned} & = x^2 + (-3-5)x + (-3) \times (-5) \\ & = x^2 - 8x + 15 \end{aligned}$$

③  $(x+6)(x+2)$

$$\begin{aligned} & = x^2 + (6+2)x + 6 \times 2 \\ & = x^2 + 8x + 12 \end{aligned}$$

④  $(a-7)(a-2)$

$$\begin{aligned} & = a^2 + (-7-2)a + (-7) \times (-2) \\ & = a^2 - 9a + 14 \end{aligned}$$

⑤  $(x + \frac{1}{4})(x + \frac{3}{4})$

$$\begin{aligned} & = x^2 + (\frac{1}{4} + \frac{3}{4})x + \frac{1}{4} \times \frac{3}{4} \\ & = x^2 + x + \frac{3}{16} \end{aligned}$$

展開のしかた(2)

$$\begin{aligned} & (x+4)(x-8) \\ = & x^2 + \underline{(4-8)}x + 4 \times (-8) \\ = & x^2 - 4x - 12 \quad \boxed{4 + (-8) = 4 - 8} \end{aligned}$$

【問2】 次の式を展開しなさい。

①  $(x+3)(x-7)$

$$\begin{aligned} & = x^2 + (3-7)x - 21 \\ & = x^2 - 4x - 21 \end{aligned}$$

②  $(x-5)(x+2)$

$$\begin{aligned} & = x^2 + (-5+2)x + (-5) \times 2 \\ & = x^2 - 3x - 10 \end{aligned}$$

③  $(x+2)(x-9)$

$$\begin{aligned} & = x^2 + (2-9)x + 2 \times (-9) \\ & = x^2 - 7x - 18 \end{aligned}$$

④  $(x-4)(x+3)$

$$\begin{aligned} & = x^2 + (-4+3)x + (-4) \times 3 \\ & = x^2 - x - 12 \end{aligned}$$

⑤  $(x + \frac{1}{2})(x - \frac{1}{3})$

$$\begin{aligned} & = x^2 + (\frac{1}{2} - \frac{1}{3})x + \frac{1}{2} \times (-\frac{1}{3}) \\ & = x^2 + \frac{1}{6}x - \frac{1}{6} \end{aligned}$$