

## 展開と因数分解 [単項式と多項式の除法]

### (多項式)÷(単項式)

除法を乗法にして計算

$$(a + b) \div c = (a + b) \times \frac{1}{c} = \frac{a}{c} + \frac{b}{c}$$

逆数を利用

<例>  $(6a^2 + 12a) \div 2a$

$$\begin{aligned}&= (6a^2 + 12a) \times \frac{1}{2a} \\&= 3a + 6\end{aligned}$$

$$(6x^2y - 3x) \div (-3x)$$

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

※逆数に注意！

$$\begin{aligned}(9ax - 6bx) \div \frac{3}{2}x \\&= (9ax - 6bx) \times \frac{2}{3x} \\&= 6a - 4b\end{aligned}$$

○  $\div \frac{3}{2}x \rightarrow \times \frac{2}{3x}$   
✗  $\div \frac{3}{2}x \rightarrow \times \frac{2}{3}x$

<確認問題>

次の計算をせよ。

(1)  $(2a^2 + 2a) \div 2a$

(5)  $(12x^2 - 6x) \div \frac{2}{3}x$

(2)  $(6x^2 - 3xy) \div 3x$

(6)  $(2ax + 4bx) \div \frac{2}{3}x$

(3)  $(2x^2 + xy + x) \div (-x)$

(7)  $(4x^2 + 8x) \div \left(-\frac{4}{3}x\right)$

(4)  $(4xy + 6x) \div 2x$

(8)  $(12ax^2 + a) \div \left(-\frac{1}{3}a\right)$

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<確認問題>

次の計算をせよ。

(1)  $(2a^2 + 2a) \div 2a$

$$\begin{aligned} (2a^2 + 2a) \div 2a &= (2a^2 + 2a) \times \frac{1}{2a} \\ &= a + 1 \end{aligned}$$

(2)  $(6x^2 - 3xy) \div 3x$

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

(3)  $(2x^2 + xy + x) \div (-x)$

$$\begin{aligned} (2x^2 + xy + x) \div (-x) &= (2x^2 + xy + x) \times \left(-\frac{1}{x}\right) \\ &= -2x - y - 1 \end{aligned}$$

(4)  $(4xy + 6x) \div 2x$

$$\begin{aligned} (4xy + 6x) \div 2x &= (4xy + 6x) \times \frac{1}{2x} \\ &= 2y + 3 \end{aligned}$$

(5)  $(12x^2 - 6x) \div \frac{2}{3}x$

$$\begin{aligned} (12x^2 - 6x) \div \frac{2}{3}x &= (12x^2 - 6x) \times \frac{3}{2x} \\ &= 18x - 9 \end{aligned}$$

(6)  $(2ax + 4bx) \div \frac{2}{3}x$

$$\begin{aligned} (2ax + 4bx) \div \frac{2}{3}x &= (2ax + 4bx) \times \frac{3}{2x} \\ &= 3a + 6b \end{aligned}$$

(7)  $(4x^2 + 8x) \div \left(-\frac{4}{3}x\right)$

$$\begin{aligned} (4x^2 + 8x) \div \left(-\frac{4}{3}x\right) &= (4x^2 + 8x) \times \left(-\frac{3}{4x}\right) \\ &= -3x - 6 \end{aligned}$$

(8)  $(12ax^2 + a) \div \left(-\frac{1}{3}a\right)$

$$\begin{aligned} (12ax^2 + a) \div \left(-\frac{1}{3}a\right) &= (12ax^2 + a) \times \left(-\frac{3}{a}\right) \\ &= -36x^2 - 3 \end{aligned}$$