

(2) 単項式の乗法と除法

◇ 単項式の乗法

$$\begin{array}{r} \text{例(1)} \quad 3a^2b \times (-4a^3b^2) \\ \hline \quad \quad \quad -12 \\ \quad \quad \quad \hline \quad \quad \quad a^5b^3 \\ \hline = -12a^5b^3 \end{array}$$

$$\begin{array}{l} \text{Ex. } -2x^4y^2 \times (-3x^2y) \\ = +6x^6y^3 \\ \text{係数の積} \quad \text{文字の積} \end{array}$$

$$\begin{array}{r} \text{例(2)} \quad (-3a^2)^3 \\ \hline \quad \quad \quad -27 \\ \quad \quad \quad \hline \quad \quad \quad (-3a^2) \times (-3a^2) \times (-3a^2) \\ \quad \quad \quad \hline \quad \quad \quad a^6 \\ \hline = -27a^6 \end{array}$$

$$\begin{array}{l} \text{⑤} \quad (-3a^2)^3 \\ = (-3)^3 (a^2)^3 \\ = -27a^6 \end{array}$$

$$\begin{array}{l} \text{⑥} \quad a^2 \times a^3 = a^5 \\ \quad \quad aa \quad \quad aaa \\ (a^2)^3 = a^6 \\ \quad \quad a^2 \times a^2 \times a^2 \end{array}$$

$$\begin{array}{l} \text{Ex. (1)} \quad \left(-\frac{4}{2}\right)^3 \\ = \left(-\frac{4}{2}\right) \times \left(-\frac{4}{2}\right) \times \left(-\frac{4}{2}\right) \\ = -\frac{1}{8}4^3 \end{array}$$

$$\begin{array}{l} \text{(2)} \quad 4xy \times (-5x)^2 \\ \quad \quad \quad (-5x) \times (-5x) \\ = 4xy \times 25x^2 \\ = 100x^3y \end{array}$$

◇ 単項式の除法

$$\begin{array}{l} \text{例(1)} \quad 8a^2b \div 4ab \\ = 8a^2b \times \frac{1}{4ab} \\ = \frac{\text{②} 8a^2b}{4ab} \\ = 2a \end{array}$$

④ 約分が残ったものを丸で囲む。

$$\text{⑦} \quad \frac{4}{4} = 1$$

$$\begin{array}{l} \text{Ex. (1)} \quad 20ab \div 4a \\ = 20ab \times \frac{1}{4a} \\ = \frac{\text{⑤} 20ab}{4a} \\ = 5b \end{array}$$

$$\begin{array}{l} \text{(2)} \quad \frac{4}{9}x^3y^2 \div \left(-\frac{2}{3}xy\right) \\ = \frac{4}{9}x^3y^2 \times \left(-\frac{3}{2xy}\right) \\ = \frac{\text{②} 4x^3y^2 \times \text{③} 3}{\text{③} 9 \times \text{②} 2xy} \quad \text{④ 符号を決めて1つの式にする。} \\ = -\frac{2x^2y}{3} \left(-\frac{2}{3}xy\right) \end{array}$$

$$\text{⑧} \quad -\frac{2xy}{3} \rightarrow -\frac{3}{2xy}$$

$$\begin{array}{l} \text{(2)} \quad 18x^3 \div (-6x) \\ = 18x^3 \times \left(-\frac{1}{6x}\right) \\ = \frac{\text{③} 18x^3 \times \text{④} 1}{6x} \\ = -3x^2 \end{array}$$

$$\begin{array}{l} \text{(3)} \quad \frac{2}{3}x^2y \div \left(-\frac{5}{6}xy\right) \\ = \frac{2}{3}x^2y \times \left(-\frac{6}{5xy}\right) \\ = \frac{\text{②} 2x^2y \times \text{③} 6}{3 \times \text{⑤} 5xy} \\ = -\frac{4}{5}x \end{array}$$