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(3) 単項式の乗法・除法

◇単項式の乗法

例(1) $3a^2b \times (-4a^3b^2) = -12a^5b^3$

-12 ／ a^5b^3

Ex. $-2x^4y^2 \times (-3x^2y) = 6x^6y^3$

6 ／ x^6y^3

(2) $(-3a^2)^3 = (-3a^2) \times (-3a^2) \times (-3a^2)$

-27 ／ a^6

$(-3a^2)^3$

$= (-3)^3(a^2)^3$

$= -27a^6$

$= -27a^6$

Ex. (1) $\left(-\frac{y}{2}\right)^3 = \left(-\frac{1}{2}\right)^3 y^3 = -\frac{1}{8}y^3$

(2) $4xy \times (-5x)^2 = 4xy \times 25x^2$

$(-5)^2x^2$

$= 25x^2$

100 ／ x^3y

$= 100x^3y$

(注意)

$a^2 \times a^3 = a^5$

$aa \quad aaa$

$(a^2)^3 = a^6$

$a^2 \times a^2 \times a^2$

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◇単項式の除法

例(1) $8a^2b \div 4ab = 8a^2b \times \frac{1}{4ab}$

$= \frac{8a^2b}{4ab}$ …… ㊟ 約分して残ったものを○で囲む

$= 2a$

(2) $\frac{4}{9}x^3y^2 \div \left(-\frac{2}{3}xy\right)$ 　メモ $-\frac{2xy}{3} \to -\frac{3}{2xy}$

$= \frac{4}{9}x^3y^2 \times \left(-\frac{3}{2xy}\right)$

$= -\frac{4x^3y^2 \times 3}{9 \times 2xy}$ 　㊟ 符号を決めて1つの式に

$= -\frac{2x^2y}{3}$ 　$\left(-\frac{2}{3}x^2y\right)$

(注意) $\frac{y}{y} = 1$

Ex.(1) $20ab \div 4a = 5b$

(2) $18x^3 \div (-6x) = -3x^2$

(3) $\frac{2}{3}x^2y \div \left(-\frac{5}{6}xy\right)$

$= \frac{2}{3}x^2y \times \left(-\frac{6}{5xy}\right)$

$= -\frac{4x}{5}$