文字と式（単項式の乗除）解答と解説

$\boxed{1}$ 解答 (1) $10ab$ (2) $-8xy$ (3) $-3abc$ (4) $14xyz$

(1) $5a \times 2b = 5 \times 2 \times a \times b$
$= 10ab$

(2) $4y \times (-2x) = 4 \times (-2) \times x \times y$
$= -8xy$

(3) $(-3ab) \times c = (-3) \times a \times b \times c$
$= -3abc$

(4) $(-7z) \times (-2xy) = (-7) \times (-2) \times x \times x \times y \times z$
$= 14xyz$

$\boxed{2}$ 解答 (1) $14ab$ (2) $48xy$ (3) $-6ab$ (4) $-32xyz$

(1) $7a \times 2b = 7 \times 2 \times a \times b$
$= 14ab$

(2) $(-6x) \times (-8y) = (-6) \times (-8) \times x \times x \times y$
$= 48xy$

(3) $(-4a) \times \dfrac{3}{2}b = (-4) \times \dfrac{3}{2} \times a \times b$
$= -6ab$

(4) $4xy \times (-8z) = 4 \times (-8) \times x \times x \times y \times z$
$= -32xyz$

$\boxed{3}$ 解答 (1) $-6x^2$ (2) $-8ab^2$ (3) x^2 (4) $-27a^3$

(1) $(-3x) \times 2x = (-3) \times 2 \times x \times x$
$= -6x^2$

(2) $4ab \times (-2b) = 4 \times (-2) \times a \times b \times b$
$= -8ab^2$

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

(4) $(-3a)^3 = (-3a) \times (-3a) \times (-3a)$
$= (-3) \times (-3) \times (-3) \times a \times a \times a$
$= -27a^3$

$\boxed{4}$ 解答 (1) $6m^2$ (2) $-20x^2y$ (3) $-\dfrac{1}{8}a^3$ (4) $-49a^3b^2$

(1) $6m \times m = 6 \times m \times m$
$= 6m^2$

(2) $4x \times (-5xy) = 4 \times (-5) \times x \times x \times y$
$= -20x^2y$

(3) $\left(-\dfrac{1}{2}a\right)^3 = \left(-\dfrac{1}{2}a\right) \times \left(-\dfrac{1}{2}a\right) \times \left(-\dfrac{1}{2}a\right)$
$= \left(-\dfrac{1}{2}\right) \times \left(-\dfrac{1}{2}\right) \times \left(-\dfrac{1}{2}\right) \times a \times a \times a$
$= -\dfrac{1}{8}a^3$

(4) $(-a) \times (7ab)^2 = (-a) \times (7ab) \times (7ab)$
$= (-1) \times 7 \times 7 \times a \times a \times a \times b \times b$
$= -49a^3b^2$

5 解答 (1) $3b$ (2) $4x$ (3) $-2a$ (4) $-3x$

(1) $18ab \div 6a = \dfrac{18ab}{6a}$

$\qquad = \dfrac{18 \times a \times b}{6 \times a}$

$\qquad = 3b$

(2) $-12xy \div (-3y) = \dfrac{-12xy}{-3y}$

$\qquad = \dfrac{12xy}{3y}$

$\qquad = \dfrac{12 \times x \times y}{3 \times y}$

$\qquad = 4x$

(3) $6a^2 \div (-3a) = \dfrac{6a^2}{-3a}$

$\qquad = -\dfrac{6a^2}{3a}$

$\qquad = -\dfrac{6 \times a \times a}{3 \times a}$

$\qquad = -2a$

(4) $(-15x^3) \div 5x^2 = \dfrac{-15x^3}{5x^2}$

$\qquad = -\dfrac{15x^3}{5x^2}$

$\qquad = -\dfrac{15 \times x \times x \times x}{5 \times x \times x}$

$\qquad = -3x$

6 解答 (1) $7y$ (2) $-a$ (3) $-3a^2$ (4) $3m^2n$

(1) $21xy \div 3x = \dfrac{21xy}{3x}$

$\qquad = 7y$

(2) $8abc \div (-8bc) = \dfrac{8abc}{-8bc}$

$\qquad = -a$

(3) $(-6a^3) \div 2a = \dfrac{-6a^3}{2a}$

$\qquad = -3a^2$

(4) $36m^3n^2 \div 12mn = \dfrac{36m^3n^2}{12mn}$

$\qquad = 3m^2n$

7 解答 (1) $15b$ (2) $-9x$

(1) $12ab \div \dfrac{4}{5}a = 12ab \div \dfrac{4a}{5}$

$\qquad = 12ab \times \dfrac{5}{4a}$

$\qquad = \dfrac{12 \times 5 \times a \times b}{4 \times a}$

$\qquad = 15b$

(2) $-15x^2 \div \dfrac{5}{3}x = -15x^2 \div \dfrac{5x}{3}$

$\qquad = -15x^2 \times \dfrac{3}{5x}$

$\qquad = -\dfrac{15 \times 3 \times x \times x}{5 \times x}$

$\qquad = -9x$

8 解答 (1) $-6ab$ (2) $4xyz$ (3) $25a^2b^2$ (4) $-2m^3n$ (5) $-20x^3$
(6) $-9a$ (7) $-15y$

(1) $\dfrac{3}{5}a \times (-10b) = \dfrac{3}{5} \times (-10) \times a \times b$
$= -6ab$

(2) $-\dfrac{6}{7}xy \times \left(-\dfrac{14}{3}z\right) = -\dfrac{6}{7} \times \left(-\dfrac{14}{3}\right) \times x \times x \times y \times z$
$= 4xyz$

(3) $(-5ab)^2 = (-5ab) \times (-5ab)$
$= (-5) \times (-5) \times a \times a \times b \times b$
$= 25a^2b^2$

(4) $(-m)^2 \times (-2mn) = (-m) \times (-m) \times (-2mn)$
$= (-1) \times (-1) \times (-2) \times m \times m \times m \times n$
$= -2m^3n$

(5) $-5x \times (-2x)^2 = -5x \times (-2x) \times (-2x)$
$= -5 \times (-2) \times (-2) \times x \times x \times x$
$= -20x^3$

(6) $6a^2b \div \left(-\dfrac{2}{3}ab\right) = 6a^2b \div \left(-\dfrac{2ab}{3}\right)$
$= 6a^2b \times \left(-\dfrac{3}{2ab}\right)$
$= -\dfrac{6a^2b \times 3}{2ab}$
$= -9a$

(7) $-\dfrac{5}{3}x^2y^2 \div \dfrac{1}{9}x^2y = -\dfrac{5}{3}x^2y^2 \div \dfrac{x^2y}{9}$
$= -\dfrac{5}{3}x^2y^2 \times \dfrac{9}{x^2y}$
$= -\dfrac{5x^2y^2 \times 9}{3 \times x^2y}$
$= -15y$

9 解答 (1) $50x^2y$ (2) $6x$ (3) $-b$

(1) $(-5x)^2 \times 2y = (-5x) \times (-5x) \times 2y$
$= (-5) \times (-5) \times 2 \times x \times x \times y$
$= 50x^2y$

(2) $9xy \div \dfrac{3}{2}y = 9xy \div \dfrac{3y}{2}$
$= 9xy \times \dfrac{2}{3y}$
$= \dfrac{9xy \times 2}{3y}$
$= 6x$

(3) $20abc \div 4a \div (-5c) = -\dfrac{20abc}{4a \times 5c}$
$= -b$

10 解答 (1) $18a^3b^2$ (2) $10b^2$ (3) $-\dfrac{9y}{x}$

(1) $(-3ab)^2 \times 2a = (-3ab) \times (-3ab) \times 2a$
$= (-3) \times (-3) \times 2 \times a \times a \times b \times b$
$= 18a^3b^2$

(2) $-14a^2b^4 \div \left(-\dfrac{7}{5}a^2b^2\right) = -14a^2b^4 \div \left(-\dfrac{7a^2b^2}{5}\right)$
$= -14a^2b^4 \times \left(-\dfrac{5}{7a^2b^2}\right)$
$= \dfrac{14a^2b^4 \times 5}{7a^2b^2}$
$= 10b^2$

(3) $-15xy^2 \div \left(-\dfrac{5}{2}x^2\right) \div \left(-\dfrac{2}{3}y\right) = -15xy^2 \div \left(-\dfrac{5x^2}{2}\right) \div \left(-\dfrac{2y}{3}\right)$
$= -15xy^2 \times \left(-\dfrac{2}{5x^2}\right) \times \left(-\dfrac{3}{2y}\right)$
$= -\dfrac{15xy^2 \times 2 \times 3}{5x^2 \times 2y}$
$= -\dfrac{9y}{x}$

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11 [解答] (1) $-6a$ (2) $2x$ (3) $8a^2b$ (4) $-3y^2$

(1) $9ab \times 4b \div (-6b^2) = -\dfrac{9ab \times 4b}{6b^2}$
$= -6a$

(2) $40x^3 \div (-5x) \div (-4x) = \dfrac{40x^3}{5x \times 4x}$
$= 2x$

(3) $4a^2 \div 5b \times 10b^2 = \dfrac{4a^2 \times 10b^2}{5b}$
$= 8a^2b$

(4) $-5xy^2 \div 15x^2y \times 9xy = -\dfrac{5xy^2 \times 9xy}{15x^2y}$
$= -3y^2$

12 [解答] (1) $-3a^2$ (2) $3x^2y$ (3) 14 (4) $-12xy$

(1) $9ab \times 6a \div (-18b) = -\dfrac{9ab \times 6a}{18b}$
$= -3a^2$

(2) $12x^3y \div 20xy^2 \times 5y^2 = \dfrac{12x^3y \times 5y^2}{20xy^2}$
$= 3x^2y$

(3) $(-6a) \div \left(-\dfrac{9}{7}ab\right) \times 3b = (-6a) \times \left(-\dfrac{7}{9ab}\right) \times 3b$
$= \dfrac{6a \times 7 \times 3b}{9ab}$
$= 14$

(4) $2x^2y \times 3xy^2 \div \left(-\dfrac{1}{2}x^2y^2\right) = 2x^2y \times 3xy^2 \times \left(-\dfrac{2}{x^2y^2}\right)$
$= -\dfrac{2x^2y \times 3xy^2 \times 2}{x^2y^2}$
$= -12xy$

13 [解答] (1) $-3a^3$ (2) $4xy$ (3) $3a$ (4) $-2x^2y$ (5) $4b^2$ (6) $-y^3$
(7) $-24a^3b$ (8) $9x^3$ (9) $-10x^3y$ (10) a^2

(1) $9a^2 \times ab \div (-3b) = -\dfrac{9a^2 \times ab}{3b} = -3a^3$