

多項式の計算・展開 (基本問題1) 解答

1 解答のみ

1.1 次の計算をなさい。

- (1). $4a + 6$
- (2). $27x + 12$
- (3). $-20a + 30b$
- (4). $-14xy - 35x$
- (5). $4a - 20$
- (6). $4x^2 + 7xy$
- (7). $54x^2 - 6xy$
- (8). $10a^2b - 5a^2b^2$
- (9). $-3ab^2c - 3ab^2c^2 + 12b^3c$
- (10). $-a^2b^3c - ab^3c^2 + a^2b^2c^2$

1.2 次の計算をなさい。

- (1). $4 - 2x$
- (2). $-2a - 5$
- (3). $3b + 4$
- (4). $15a^2b + 5a$
- (5). $-9x - 3y$
- (6). $2x + \frac{3y^2}{x}$
- (7). $\frac{2ab}{3} - \frac{7}{3}$
- (8). $-\frac{7y}{5} + \frac{9yz^2}{5x}$
- (9). $-\frac{9x}{y} + \frac{3z}{y}$
- (10). $\frac{6x}{y} - \frac{3z}{y}$

1.3 次の計算をなさい。

- (1). $12a + 9$
- (2). $-\frac{8}{3} - 4b$

- (3). $\frac{32bc}{5} - \frac{12c^2}{5a}$
- (4). $5y^2 - 50xy$
- (5). $-\frac{9st}{5t} + \frac{2t}{5l}$
- (6). $-12x$
- (7). $-\frac{3x^2}{4y} + \frac{3x}{5}$
- (8). 1
- (9). $\frac{17}{15}$
- (10). $21acxz + \frac{21acy}{x}$

2 計算例

2.1 次の計算をなさい。

- (1). $2(2a + 3) = 4a + 6$
- (2). $(9x + 4) \times 3 = 27x + 12$
- (3). $-5(4a - 6b) = -20a + 30b$
- (4). $(-2y - 5) \times (7x) = -14xy - 35x$
- (5). $4(a - 5) = 4a - 20$
- (6). $(4x + 7y)x = 4x^2 + 7xy$
- (7). $-6x(-9x + y) = 54x^2 - 6xy$
- (8). $-5ab(2a + ab) = -10a^2b - 5a^2b^2$
- (9). $-3bc(ab + abc - 4b^2)$
 $= -3ab^2c - 3ab^2c^2 + 12b^3c$
- (10). $ab^2c(-ab - bc + ca)$
 $= -a^2b^3c - ab^3c^2 + a^2b^2c^2$

2.2 次の計算をなさい。

- (1). $(12 - 6x) \div 3 = 4 - 2x$
- (2). $(4a + 10) \div (-2) = -2a - 5$
- (3). $(3ab + 4a) \div a = 3b + 4$

$$\begin{aligned}
 (4). \quad & (6ab^2 + 2b) \div \frac{2b}{5a} \\
 & = (6ab^2 + 2b) \times \frac{5a}{2b} \\
 & = 15a^2b + 5a
 \end{aligned}$$

$$\begin{aligned}
 (5). \quad & (18x^2 + 6xy) \div (-2x) \\
 & = -9x - 3y
 \end{aligned}$$

$$\begin{aligned}
 (6). \quad & (4x^2 + 6y^2) \div 2x \\
 & = 2x + \frac{3y^2}{x}
 \end{aligned}$$

$$\begin{aligned}
 (7). \quad & (10ab^2 - 35b) \div \frac{15b}{4} \\
 & = (10ab^2 - 35b) \times \frac{4}{15b} \\
 & = \frac{2ab}{3} - \frac{7}{3}
 \end{aligned}$$

$$\begin{aligned}
 (8). \quad & (7xy^2z - 9y^2z^3) \div (-5xyz) \\
 & = -\frac{7y}{5} + \frac{9yz^2}{5x}
 \end{aligned}$$

$$\begin{aligned}
 (9). \quad & (9x - 3z) \div (-y) \\
 & = -\frac{9x}{y} + \frac{3z}{y}
 \end{aligned}$$

$$\begin{aligned}
 (10). \quad & (24xy - 12yz) \div 4y^2 \\
 & = \frac{6x}{y} - \frac{3z}{y}
 \end{aligned}$$

$$\begin{aligned}
 (10). \quad & (x^2yz^3 + y^2z^2) \div \frac{xyz^2}{21ac} \\
 & = (x^2yz^3 + y^2z^2) \times \frac{21ac}{xyz^2} \\
 & = 21acxz + \frac{21acy}{x}
 \end{aligned}$$

2.3 次の計算をなさい。

$$(1). \quad 3 \times (4a + 3) = 12a + 9$$

$$\begin{aligned}
 (2). \quad & (4a + 6ab) \times \left(-\frac{2}{3a}\right) \\
 & = -\frac{8}{3} - 4b
 \end{aligned}$$

$$\begin{aligned}
 (3). \quad & \frac{4c}{5a}(8ab - 3c) \\
 & = \frac{32bc}{5} - \frac{12c^2}{5a}
 \end{aligned}$$

$$\begin{aligned}
 (4). \quad & \left(\frac{3}{5}xy - 6x^2\right) \div \frac{3x}{25y} \\
 & = \left(\frac{3}{5}xy - 6x^2\right) \times \frac{25y}{3x} \\
 & = 5y^2 - 50xy
 \end{aligned}$$

$$\begin{aligned}
 (5). \quad & -3s\left(\frac{3t}{5l} - \frac{2t}{15sl}\right) \\
 & = -\frac{9st}{5l} + \frac{2t}{5l}
 \end{aligned}$$

$$\begin{aligned}
 (6). \quad & 100y\left(\frac{78x}{100y} - \frac{9x}{10y}\right) \\
 & = 78x - 90x = -12x
 \end{aligned}$$

$$\begin{aligned}
 (7). \quad & (5x - 4y) \div \left(-\frac{20y}{3x}\right) \\
 & = (5x - 4y) \times \left(-\frac{3x}{20y}\right) \\
 & = -\frac{3x^2}{4y} + \frac{3x}{5}
 \end{aligned}$$

$$\begin{aligned}
 (8). \quad & \frac{100}{81}\left(\frac{27}{20} - \frac{27}{50}\right) \\
 & = \frac{5}{3} - \frac{2}{3} = 1
 \end{aligned}$$

$$\begin{aligned}
 (9). \quad & \left(\frac{2}{3} + \frac{3}{4}\right) \div \frac{5}{4} \\
 & = \left(\frac{2}{3} + \frac{3}{4}\right) \times \frac{4}{5} \\
 & = \frac{8}{15} + \frac{9}{15} = \frac{17}{15}
 \end{aligned}$$