

■練習，補充問題(節末)，章末問題の解答

第1章 数と式

○練習の解答

練習1

- (1) 係数6, 次数2
- (2) 係数1, 次数1
- (3) 係数-1, 次数4
- (4) 係数-3, 次数3

練習2

- (1) 係数 $2a$ , 次数3
- (2) 係数 $3x$ , 次数2
- (3) 係数 $-6a$ , 次数3

練習3

- (1)  $4x^2 + 3x - 1 - 2x^2 - 4x + 6$   
 $= (4-2)x^2 + (3-4)x + (-1+6)$   
 $= 2x^2 - x + 5$
- (2)  $3a^2 - 2ab - 4b^2 - 5a^2 + 2ab - 8b^2$   
 $= (3-5)a^2 + (-2+2)ab + (-4-8)b^2$   
 $= -2a^2 - 12b^2$

練習4

- (1) 3次式
- (2) 4次式

練習5

- (1) 3次式, 定数項 $by^2 + c$
- (2) 2次式, 定数項 $ax^3 + c$

練習6

- (1)  $(a+2)x + (4a^2 - 3a)$
- (2)  $x^2 + (3y-1)x + (2y^2 - 3y - 2)$

練習7

- (1)  $A+B = (2x^2 + 3x - 1) + (4x^2 - 5x - 6)$   
 $= (2+4)x^2 + (3-5)x + (-1-6)$   
 $= 6x^2 - 2x - 7$   
 $A-B = (2x^2 + 3x - 1) - (4x^2 - 5x - 6)$   
 $= 2x^2 + 3x - 1 - 4x^2 + 5x + 6$   
 $= (2-4)x^2 + (3+5)x + (-1+6)$   
 $= -2x^2 + 8x + 5$
- (2)  $A+B = (4x^3 - 3x^2 - 2x + 5) + (2x^3 - 3x^2 + 7)$   
 $= (4+2)x^3 + (-3-3)x^2 - 2x + (5+7)$

$$= 6x^3 - 6x^2 - 2x + 12$$

$$\begin{aligned} A-B &= (4x^3 - 3x^2 - 2x + 5) - (2x^3 - 3x^2 + 7) \\ &= 4x^3 - 3x^2 - 2x + 5 - 2x^3 + 3x^2 - 7 \\ &= (4-2)x^3 + (-3+3)x^2 - 2x + (5-7) \\ &= 2x^3 - 2x - 2 \end{aligned}$$

練習8

- (1)  $A+2B = (x^2 + 4x - 3) + 2(2x^2 - x + 4)$   
 $= x^2 + 4x - 3 + 4x^2 - 2x + 8$   
 $= (1+4)x^2 + (4-2)x + (-3+8)$   
 $= 5x^2 + 2x + 5$
- (2)  $2A-3B = 2(x^2 + 4x - 3) - 3(2x^2 - x + 4)$   
 $= 2x^2 + 8x - 6 - 6x^2 + 3x - 12$   
 $= (2-6)x^2 + (8+3)x + (-6-12)$   
 $= -4x^2 + 11x - 18$

練習9

- (1)  $2a^3 \times 4a^2 = (2 \times 4) \times a^{3+2} = 8a^5$
- (2)  $a^2 \times (-3a) = -3 \times a^{2+1} = -3a^3$
- (3)  $4ab^2 \times b^4 = 4 \times a \times b^{2+4} = 4ab^6$
- (4)  $3x^2y \times (-2x^3y^2) = 3 \times (-2) \times x^{2+3} \times y^{1+2} = -6x^5y^3$
- (5)  $(-a^2b^3)^2 = (-1)^2 \times (a^2)^2 \times (b^3)^2 = a^4b^6$
- (6)  $(-3x^2y)^3 = (-3)^3 \times (x^2)^3 \times y^3 = -27x^6y^3$

練習10

- (1)  $4x^2(2x^2 - 3x + 5)$   
 $= 4x^2 \times 2x^2 + 4x^2 \times (-3x) + 4x^2 \times 5$   
 $= 8x^4 - 12x^3 + 20x^2$
- (2)  $(3a^2 - a - 2) \times (-2a)$   
 $= 3a^2 \times (-2a) + (-a) \times (-2a) + (-2) \times (-2a)$   
 $= -6a^3 + 2a^2 + 4a$

練習11

- (1)  $(2x-1)(4x^2+3) = (2x-1) \cdot 4x^2 + (2x-1) \cdot 3$   
 $= 8x^3 - 4x^2 + 6x - 3$
- (2)  $(2x^2+x-3)(x-2)$   
 $= (2x^2+x-3)x + (2x^2+x-3) \cdot (-2)$   
 $= 2x^3 + x^2 - 3x - 4x^2 - 2x + 6$   
 $= 2x^3 - 3x^2 - 5x + 6$
- (3)  $(x+3)(x^2-2x+1) = x(x^2-2x+1) + 3(x^2-2x+1)$   
 $= x^3 - 2x^2 + x + 3x^2 - 6x + 3$   
 $= x^3 + x^2 - 5x + 3$
- (4)  $(2x+1)(3x^2+x-2)$   
 $= 2x(3x^2+x-2) + 1 \cdot (3x^2+x-2)$   
 $= 6x^3 + 2x^2 - 4x + 3x^2 + x - 2$   
 $= 6x^3 + 5x^2 - 3x - 2$