

2. 因数分解-1 [解答]

■ 確認問題1A

(1)

ア $a^2 - 5a - 6$ イ $a + 1$ ウ $a - 6$

(2)

ア $a^2 - 64$ イ $a + 8$ ウ $a - 8$

■ 確認問題1B

(1) $b(x - y)$

(2) $a(b + 6)$

(3) $xy(x + y)$

(4) $7xb(2x - 3b)$

(5) $3y(xy - 4x - 3)$

(6) $2ab(4a - 2b + 1)$

■ 確認問題2

(1) $(a + 2)(a + 7)$

(2) $(a - 6)(a - 7)$

(3) $(a - 7)(a + 8)$

(4) $(x + 2)(x - 6)$

(5) $(a - 6)(a + 8)$

(6) $(a - 3)(a + 15)$

復習問題

1.

(1) $9x^2 - 24x + 7$

(2) $4a^2 - \frac{1}{9}$

2.

(1) $x^2 + 2xy + y^2 - 6x - 6y + 36$

(2) $x^2 + 2xy + y^2 + 3x + 3y - 4$

[解説]

(1) $A = x + y$ とすると

$$(x + y - 6)^2 = (A - 6)^2 = A^2 - 12A + 36$$
$$= (x + y)^2 - 12(x + y) + 36$$

$$= x^2 + 2xy + y^2 - 6x - 6y + 36$$

(2) $A = x + y$ とすると

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

$$= x^2 + 2xy + y^2 + 3x + 3y - 4$$

3.

(1) $2x + 38$

(2) $3x^2 + 12x - 31$

[解説]

(1) $(x - 5)(x + 5) - (x + 7)(x - 9)$

$$= (x^2 - 25) - (x^2 - 2x - 63)$$

$$= x^2 - 25 - x^2 + 2x + 63$$

$$= 2x + 38$$

(2) $2(x + 3)^2 + (x + 7)(x - 7)$

$$= 2(x^2 + 6x + 9) + (x^2 - 49)$$

$$= 2x^2 + 12x + 18 + x^2 - 49$$

$$= 3x^2 + 12x - 31$$

【演習】

1.

(1) $x^2 + x + 2$

(2) $x^2 - 2x - 1$

[解説]

(1) $(x + 2)(x + 3) - 4(x + 1)$

$$= x^2 + 5x + 6 - 4x - 4 = x^2 + x + 2$$

(2) $(x - 3)^2 + 2(2x - 5)$

$$= x^2 - 6x + 9 + 4x - 10 = x^2 - 2x - 1$$

2.

(1) $a(x - y)$

(2) $x(y + 6)$

(3) $5x(a - b)$

(4) $4a(2m - n)$

(5) $ab(a + b)$

(6) $2xy(3x - 5)$

(7) $7ay(2a - 3y)$

(8) $5xy(1 + 3y)$

(9) $3b(ab - 4a - 3)$

(10) $2xy(4x - 2y + 1)$

3.

(1) $(x + 2)(x + 7)$

(2) $(x - 2)(x - 8)$

(3) $(x - 6)(x - 7)$

(4) $(x - 1)(x + 9)$

(5) $(x - 7)(x + 8)$

(6) $(x + 3)(x - 6)$

(7) $(a + 2)(a - 6)$

(8) $(y + 6)(y + 9)$

(9) $(x - 6)(x + 8)$

(10) $(x + 8)(x - 9)$

(11) $(x - 3)(x + 15)$

(12) $(a - 7)(a - 9)$