

乗法公式④ 解答と解説

1 解答 (1)  $4x^2+8x+3$  (2)  $9x^2+30x+25$  (3)  $36a^2-12a+1$  (4)  $25y^2-4$

$$(1) (2x+1)(2x+3) = (2x)^2 + (1+3) \times 2x + 1 \times 3 \\ = 4x^2 + 8x + 3$$

$$(2) (3x+5)^2 = (3x)^2 + 2 \times 5 \times 3x + 5^2 \\ = 9x^2 + 30x + 25$$

$$(3) (6a-1)^2 = (6a)^2 - 2 \times 1 \times 6a + 1^2 \\ = 36a^2 - 12a + 1$$

$$(4) (5y+2)(5y-2) = (5y)^2 - 2^2 \\ = 25y^2 - 4$$

2 解答 (1)  $4x^2+4xy-3y^2$  (2)  $x^2-\frac{2}{3}xy+\frac{1}{9}y^2$  (3)  $25b^2-4a^2$

$$(1) (2x+3y)(2x-y) = (2x)^2 + \{3y+(-y)\} \times 2x + 3y \times (-y) \\ = 4x^2 + 4xy - 3y^2$$

$$(2) \left(-x + \frac{1}{3}y\right)^2 = (-x)^2 + 2 \times \frac{1}{3}y \times (-x) + \left(\frac{1}{3}y\right)^2 \\ = x^2 - \frac{2}{3}xy + \frac{1}{9}y^2$$

$$(3) (2a+5b)(5b-2a) = (5b+2a)(5b-2a) \\ = (5b)^2 - (2a)^2 \\ = 25b^2 - 4a^2$$

3 解答 (1)  $x^2+2xy-24y^2$  (2)  $x^2+4xy+4y^2$  (3)  $4x^2-xy+\frac{1}{16}y^2$

(4)  $9p^2-16q^2$

$$(1) (x-4y)(x+6y) = x^2 + \{(-4y)+6y\}x + (-4y) \times 6y \\ = x^2 + 2xy - 24y^2$$

$$(2) (x+2y)^2 = x^2 + 2 \times 2y \times x + (2y)^2 \\ = x^2 + 4xy + 4y^2$$

$$(3) \left(2x - \frac{1}{4}y\right)^2 = (2x)^2 - 2 \times \frac{1}{4}y \times 2x + \left(\frac{1}{4}y\right)^2 \\ = 4x^2 - xy + \frac{1}{16}y^2$$

$$(4) (3p+4q)(3p-4q) = (3p)^2 - (4q)^2 \\ = 9p^2 - 16q^2$$