

## 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)  $9p^2 - 16q^2$

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

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

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

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