

§ 2.2 整式の加法・減法・乗法

問題 2.2.1

$$\begin{aligned}A + B &= (3x^2 - 6ax - 2) + (2x^3 - 7ax^2 + 3ax - 5) = 2x^3 + (3 - 7a)x^2 - 3ax - 7, \\A - B &= (3x^2 - 6ax - 2) - (2x^3 - 7ax^2 + 3ax - 5) = -2x^3 + (7a + 3)x^2 - 9ax + 3, \\B - A &= (2x^3 - 7ax^2 + 3ax - 5) - (3x^2 - 6ax - 2) = 2x^3 - (7a + 3)x^2 + 9ax - 3.\end{aligned}$$

問題 2.2.2

$$\begin{aligned}(1) \quad \left(3x + \frac{7}{2}\right)(2x^2 - 6x + 3) &= 6x^3 - 18x^2 + 9x + x^2 - 21x + \frac{21}{2} \\&= 6x^3 - 11x^2 - 12x + \frac{21}{2}.\end{aligned}$$

$$\begin{aligned}(2) \quad (3x - 2k)(x^2 + 2kx - 3) &= 3x^3 + 6kx^2 - 9x - (2kx^2 + 4k^2x - 6k) \\&= 3x^3 + 4kx^2 - (4k^2 + 9)x + 6k.\end{aligned}$$

問題 2.2.3

$$(ax + 2)(3x - 4a) = 3ax^2 + (-4a^2 + 6)x - 8a = 3ax^2 + (6 - 4a^2)x - 8a.$$

問題 2.2.4

$$\left(y - \frac{4}{3}\right)^3 = y^3 - 3y^2 \frac{4}{3} + 3y \left(\frac{4}{3}\right)^2 - \left(\frac{4}{3}\right)^3 = y^3 - 4y^2 + \frac{16}{3}y - \frac{64}{27}.$$