

1.4 不定積分

例題 A

$$\square (1) \int (1 - x + x^2 - x^3) dx = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + C$$

$$(2) \int (1 - x^2 + x^4 - x^6) dx = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + C$$

$$(3) \int \left(1 + \frac{x^2}{2} + \frac{2}{8}x^4 + \frac{5}{16}x^6\right) dx = x + \frac{x^3}{6} + \frac{3}{40}x^5 + \frac{5}{112}x^7 + C$$

$$\square (1) f(x) = 3x + C$$

$$f(0) = C = 1 \quad \text{故} \quad f(x) = 3x + 1$$

$$(2) f(x) = \frac{x^2}{2} + C$$

$$f(0) = C = 1 \quad \text{故} \quad f(x) = \frac{x^2}{2} + 1$$

$$(3) f(x) = \frac{x^2}{2} + C$$

$$f(1) = \frac{1}{2} + C = 5 \quad \text{故} \quad C = \frac{9}{2} \quad (\text{E} \rightarrow \text{D}) \quad f(x) = \frac{x^2}{2} + \frac{9}{2}$$

$$(4) f(x) = x + \frac{x^2}{2} + \frac{x^3}{3} + C$$

$$f(0) = C = 1 \quad (\text{E} \rightarrow \text{D}) \quad f(x) = x + \frac{x^2}{2} + \frac{x^3}{3} + 1$$