

112. 不定積分①

$$(1) x^2 - x + C \quad (C \text{ は積分定数 } ※以下同じ)$$

$$(2) \frac{1}{3}x^3 - x^2 + 3x + C$$

$$(3) x^4 - x^3 + x^2 - x + C$$

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

$$(5) 2x^3 - \frac{7}{2}x^2 - 3x + C$$

$$(6) t^3 - t^2 - t + C$$

$$(7) \frac{1}{3}(x+3)^3 + C$$

$$(8) \frac{1}{4}(x-1)^4 + (x-1)^3 + C$$

次の不定積分を求めよ。

$$(1) \int (2x-1) dx = x^2 - x + C \quad (C \text{ は積分定数 } ※以下同じ)$$

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

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

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

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

$$(6) \int (t-1)(3t+1) dt = \int (3t^2 - 2t - 1) dt = t^3 - t^2 - t + C$$

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

$$(8) \int (x-1)^2(x+2) dx = \int (x-1)^2(x-1+3) dx = \int \{(x-1)^3 + 3(x-1)^2\} dx = \frac{1}{4}(x-1)^4 + (x-1)^3 + C$$



$$\int (x+a)^n dx = \frac{1}{n+1}(x+a)^{n+1} + C$$

$$\int (ax+b)^n dx = \frac{1}{n+1} \cdot \frac{1}{a}(ax+b)^{n+1} + C$$

の積分は、常識レベルとしておきます。