

1 次の不定積分を求めよ。尚、 C は積分定数とする。

(1) $\int (x^7 - 2x^5 - 4x^3 + 8x) dx$

(2) $\int (x-2)(x+5) dx$

(3) $\int \left(\frac{1}{x} + \frac{4}{x^5} - \frac{2}{\sqrt[5]{x^3}} \right) dx$

(4) $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right) dx$

(5) $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 dx$

(6) $\int \left(2e^x + \frac{3}{\cos^2 x} \right) dx$

(7) $\int \{ (1 - \sin x)^2 + \cos^2 x \} dx$

(8) $\int \sin^2 \left(\frac{x}{2} \right) dx$

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(1) $\frac{1}{8}x^8 - \frac{1}{3}x^6 - x^4 + 4x^2 + C$ (2) $\frac{1}{3}x^3 + \frac{3}{2}x^2 - 10x + C$ (3) $\log x - \frac{1}{x^4} - 5\sqrt[5]{x^2} + C$

(4) $\frac{2(x+3)\sqrt{x}}{3} + C$ (Hint : $x^{\frac{3}{2}} = x\sqrt{x}$) (5) $\frac{1}{2}x^2 + 2x + \log x + C$ (6) $2e^x + 3\tan x + C$

(7) $2x + 2\cos x + C$ (Hint : $\sin^2 x + \cos^2 x = 1$) (8) $\frac{x - \sin x}{2} + C$ (Hint : 半角公式)