

解析学I (担当:近藤) #9
2007年6月21日

[I] 次の不定積分を書け.

$$(1) \int dx =$$

$$(2) \int x^8 dx =$$

$$(3) \int \sqrt{x} dx =$$

$$(4) \int \frac{dx}{x} =$$

$$(5) \int \frac{dx}{x^3} =$$

$$(6) \int \frac{dx}{x^5} =$$

$$(7) \int e^x dx =$$

$$(8) \int 2^x dx =$$

$$(9) \int 3^x dx =$$

$$(10) \int \sin x dx =$$

$$(11) \int \cos x dx =$$

$$(12) \int \frac{dx}{\cos^2 x} =$$

$$(13) \int \frac{dx}{\sqrt{1-x^2}} =$$

$$(14) \int \frac{dx}{1+x^2} =$$

$$(15) \int \sinh x dx =$$

$$(16) \int \cosh x dx =$$

$$(17) \int \frac{dx}{\cosh^2 x} =$$

$$(18) \int \frac{dx}{\sqrt{x^2+1}} =$$

$$(19) \int \frac{dx}{\sqrt{x^2-1}} =$$

$$(20) \int \frac{dx}{1-x^2} =$$

[III] 次の不定積分を求めよ .

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

$$(4) \int \frac{dx}{\sqrt{1 + 3x}} \quad (5) \int \tanh x dx \quad (6) \int \frac{dx}{\tan x}$$

$$(7) \int xe^{x^2} dx \quad (8) \int \frac{\log x}{x} dx \quad (9) \int \frac{dx}{e^x + e^{-x}}$$

[II] 次の不定積分を求めよ .

$$(1) \int x^2 e^x dx \quad (2) \int x \log x dx \quad (3) \int x^2 \sin x dx$$

$$(4) \int x^2 \cos x dx \quad (5) \int \text{Sin}^{-1} x dx \quad (6) \int \text{Tan}^{-1} x dx$$