解析学Ⅰ（担当:近藤） #9
2006年6月22日

[I] 次の不定積分を書け.

(1) $\displaystyle\int dx =$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[II] 次の不定積分を求めよ.

(1) $\displaystyle\int (x^3 - x^2 + 3x - 2)\, dx$

(2) $\displaystyle\int \sqrt[4]{x}\ dx$

(3) $\displaystyle\int \frac{1+x}{x^3}\, dx$

(4) $\displaystyle\int (4\ \sin x - 3\ \cos x)\, dx$

(5) $\displaystyle\int \tan x\ dx$

(6) $\displaystyle\int \frac{x+2}{\sqrt{1-2x^2}}\, dx$

(7) $\displaystyle\int \frac{dx}{\sqrt{x^2 - 3^2}}$

(8) $\displaystyle\int \log x\, dx$

(9) $\displaystyle\int x^2 \sin x\, dx$