常用导数

编号	原函数	导函数
2	$y = n^x$	$y' = n^x \ln n$
3	$y = \ln x, \ln|x|$	$y' = \dfrac{1}{x}$(同定义域)
4	$y = x^n$	$y' = nx^{n-1}$
5	$y = \sin x$	$y' = \cos x$
6	$y = \cos x$	$y' = -\sin x$
7	$y = \tan x$	$y' = \dfrac{1}{\cos^2 x} = \sec^2 x$
8	$y = \cot x$	$y' = \dfrac{-1}{\sin^2 x} = -\csc^2 x$
9	$y = \sec x$	$y' = \sec x \tan x$
10	$y = \csc x$	$y' = -\csc x \cot x$
11	$y = \arcsin x$	$y' = \dfrac{1}{\sqrt{1-x^2}}$
12	$y = \arccos x$	$y' = -\dfrac{1}{\sqrt{1-x^2}}$
13	$y = \arctan x$	$y' = \dfrac{1}{1+x^2}$
14	$y = \operatorname{arccot} x$	$y' = -\dfrac{1}{1+x^2}$
15	$y = \operatorname{arcsec} x$	$y' = \dfrac{1}{x\sqrt{x^2-1}}$
16	$y = \operatorname{arccsc} x$	$y' = -\dfrac{1}{x\sqrt{x^2-1}}$
17	$y = \sinh x = \dfrac{e^x - e^{-x}}{2}$	$y' = \cosh x$
18	$y = \cosh x = \dfrac{e^x + e^{-x}}{2}$	$y' = \sinh x$
19	$y = \tanh x = \dfrac{e^x - e^{-x}}{e^x + e^{-x}}$	$y' = \dfrac{1}{\cosh x^2}$
20	$y = \operatorname{arsh} x = \ln(x + \sqrt{x^2+1})$	$y' = \dfrac{1}{\sqrt{x^2+1}}$
21	$y = \operatorname{arch} x = \ln(x + \sqrt{x^2-1})$	$y' = \dfrac{1}{\sqrt{x^2-1}}$
22	$y = \operatorname{arth} x = \dfrac{1}{2}\ln(\dfrac{1+x}{1-x})$	$y' = \dfrac{1}{1-x^2}$

积分补充

编号	原函数	导函数
23	$\ln\left|x + \sqrt{x^2 \pm a^2}\right| + C$	$\dfrac{1}{\sqrt{x^2 \pm a^2}}$
24	$\dfrac{a^2}{2}\arcsin\dfrac{x}{a} + \dfrac{x}{2}\sqrt{a^2 - x^2} + C$	$\sqrt{a^2 - x^2}$
25	$\dfrac{x}{2}\sqrt{x^2 \pm a^2} \pm \dfrac{a^2}{2}\ln\left|x + \sqrt{x^2 \pm a^2}\right| + C$	$\sqrt{x^2 \pm a^2}$