

• $\frac{d}{dx}c = 0$ where c is constant	• $\frac{d}{dx}x^n = nx^{n-1}$	
• $\frac{d}{dx}\sin x = \cos x$	• $\frac{d}{dx}\tan x = \sec^2 x$	• $\frac{d}{dx}\csc x = -\csc x \cot x$
• $\frac{d}{dx}\cos x = -\sin x$	• $\frac{d}{dx}\cot x = -\csc^2 x$	• $\frac{d}{dx}\sec x = \sec x \tan x$
• $\frac{d}{dx}\sin^{-1}x = \frac{1}{\sqrt{1-x^2}}$	• $\frac{d}{dx}\tan^{-1}x = \frac{1}{1+x^2}$	• $\frac{d}{dx}\sec^{-1}x = \frac{1}{x\sqrt{x^2-1}}$
• $\frac{d}{dx}\cos^{-1}x = \frac{-1}{\sqrt{1-x^2}}$	• $\frac{d}{dx}\cot^{-1}x = \frac{-1}{1+x^2}$	• $\frac{d}{dx}\csc^{-1}x = \frac{-1}{x\sqrt{x^2-1}}$
• $\frac{d}{dx}a^x = a^x \ln a$	• $\frac{d}{dx}\log_a x = \frac{1}{x \ln a}$	
• $\frac{d}{dx}e^x = e^x$	• $\frac{d}{dx}\ln x = \frac{1}{x}$	
• $\frac{d}{dx}\sinh x = \cosh x$	• $\frac{d}{dx}\tanh x = \operatorname{sech}^2 x$	• $\frac{d}{dx}\operatorname{sech} x = -\operatorname{sech} x \tanh x$
• $\frac{d}{dx}\cosh x = \sinh x$	• $\frac{d}{dx}\coth x = -\operatorname{csch}^2 x$	• $\frac{d}{dx}\operatorname{csch} x = -\operatorname{csch} x \coth x$
• $\frac{d}{dx}\sinh^{-1}x = \frac{1}{\sqrt{1+x^2}}$	• $\frac{d}{dx}\tanh^{-1}x = \frac{1}{1-x^2}$	• $\frac{d}{dx}\operatorname{sech}^{-1}x = \frac{-1}{x\sqrt{1-x^2}}$
• $\frac{d}{dx}\cosh^{-1}x = \frac{1}{\sqrt{x^2-1}}$	• $\frac{d}{dx}\coth^{-1}x = \frac{1}{1-x^2}$	• $\frac{d}{dx}\operatorname{csch}^{-1}x = \frac{-1}{x\sqrt{1+x^2}}$

Some Important Integrals

• $\int x^n dx = \frac{x^{n+1}}{n+1}$	• $\int (ax+b)^n dx = \frac{(ax+b)^{n+1}}{a(n+1)}$	
• $\int \frac{1}{x} dx = \ln x $	• $\int \frac{1}{ax+b} dx = \frac{\ln ax+b }{a}$	
• $\int e^x dx = e^x$	• $\int e^{(ax+b)} dx = \frac{e^{(ax+b)}}{a}$	• $\int a^x dx = \frac{a^x}{\ln a}$
• $\int \sin x dx = -\cos x$	• $\int \cos x dx = \sin x$	
• $\int \sec^2 x dx = \tan x$	• $\int \csc^2 x dx = -\cot x$	
• $\int \sec x \tan x dx = \sec x$	• $\int \csc x \cot x dx = -\csc x$	
• $\int \tan x dx = \ln \sec x $	• $\int \cot x dx = \ln \sin x $	
• $\int \sec x dx = \ln \sec x + \tan x $	• $\int \csc x dx = \ln \csc x - \cot x $	
• $\int \frac{dx}{\sqrt{a^2-x^2}} = \sin^{-1}\frac{x}{a}$ or $-\cos^{-1}\frac{x}{a}$	• $\int \frac{dx}{a^2+x^2} = \frac{1}{a}\tan^{-1}\frac{x}{a}$ or $-\frac{1}{a}\cot^{-1}\frac{x}{a}$	
• $\int \frac{dx}{x\sqrt{x^2-a^2}} = \frac{1}{a}\sec^{-1}\frac{x}{a}$ or $-\frac{1}{a}\csc^{-1}\frac{x}{a}$		
• $\int \frac{dx}{a^2-x^2} = \frac{1}{2a}\ln\left \frac{a+x}{a-x}\right $	• $\int \frac{dx}{x^2-a^2} = \frac{1}{2a}\ln\left \frac{x-a}{x+a}\right $	
• $\int \frac{1}{\sqrt{x^2+a^2}} dx = \ln\left x + \sqrt{x^2+a^2}\right $	• $\int \frac{1}{\sqrt{x^2-a^2}} dx = \ln\left x + \sqrt{x^2-a^2}\right $	
• $\int \sqrt{a^2-x^2} dx = \frac{x\sqrt{a^2-x^2}}{2} + \frac{a^2}{2}\sin^{-1}\left(\frac{x}{a}\right)$		