

সৃষ্টি কলেজ অব টাঙ্গাইল

প্রয়োজনীয় সূত্র - যোগজীকরণ/অন্তরীকরণ

উচ্চতর গণিত ১ম পত্র অধ্যায় ৯+১০

1.	$\frac{d}{dx}(x^n) = nx^{n-1}$	$\int x^n dx = \frac{x^{n+1}}{n+1} + c \text{ where } n \neq -1$
2.	$\frac{d}{dx}(e^{mx}) = me^{mx}$	$\int e^{mx} dx = \frac{e^{mx}}{m} + c$
3.	$\frac{d}{dx}(a^x) = a^x \ln a$	$\int a^x dx = \frac{a^x}{\ln a} + c$
4.	$\frac{d}{dx}(\ln x) = \frac{1}{x}$	$\int \frac{1}{x} dx = \ln x + c$
5.	$\frac{d}{dx}(\sin x) = \cos x$	$\int \cos x dx = \sin x + c$
6.	$\frac{d}{dx}(\cos x) = -\sin x$	$\int \sin x dx = -\cos x + c$
7.	$\frac{d}{dx}(\tan x) = \sec^2 x$	$\int \sec^2 x dx = \tan x + c$
8.	$\frac{d}{dx}(\cot x) = -\operatorname{cosec}^2 x$	$\int \operatorname{cosec}^2 x dx = -\cot x + c$
9.	$\frac{d}{dx}(\sec x) = \sec x \tan x$	$\int \sec x \tan x dx = \sec x + c$
10.	$\frac{d}{dx}(\operatorname{cosec} x) = -\operatorname{cosec} x \cot x$	$\int \operatorname{cosec} x \cot x dx = -\operatorname{cosec} x + c$
11.	$\frac{d}{dx}(\sin^{-1} x) = \frac{1}{\sqrt{1-x^2}}$	$\int \frac{dx}{\sqrt{1-x^2}} = \sin^{-1} x + c$
12.	$\frac{d}{dx}(\cos^{-1} x) = -\frac{1}{\sqrt{1-x^2}}$	$\int -\frac{dx}{\sqrt{1-x^2}} = \cos^{-1} x + c$
13.	$\frac{d}{dx} \tan^{-1} x = \frac{1}{1+x^2}$	$\int \frac{1}{1+x^2} dx = \tan^{-1} x + c$
14.	$\frac{d}{dx} \cot^{-1} x = -\frac{1}{1+x^2}$	$\int \frac{-1}{1+x^2} dx = \cot^{-1} x + c$
15.	$\frac{d}{dx} \sec^{-1} x = \frac{1}{x\sqrt{x^2-1}}$	$\int \frac{dx}{x\sqrt{x^2-1}} = \sec^{-1} x + c$
16.	$\frac{d}{dx} \operatorname{cosec}^{-1} x = -\frac{1}{x\sqrt{x^2-1}}$	$\int \frac{-dx}{x\sqrt{x^2-1}} = \operatorname{cosec}^{-1} x + c$
18.	$\int \frac{dx}{a^2-x^2} = \frac{1}{2a} \ln \left \frac{a+x}{a-x} \right + c$	$\int \frac{dx}{x^2-a^2} = \frac{1}{2a} \left \frac{x-a}{x+a} \right + c$
19.	$\int \frac{dx}{\sqrt{x^2-a^2}} = \ln \left x + \sqrt{x^2-a^2} \right + c$	$\int \frac{dx}{\sqrt{x^2+a^2}} = \ln \left x + \sqrt{x^2+a^2} \right + c$
20.	$\int u v dx = u \int v dx - \int \left\{ \frac{d}{dx} u \int v dx \right\} dx$	