সৃষ্টি কলেজ অব টাঙ্গাইল

প্রয়োজনীয় সূত্র - যোগজীকরণ/অন্তরীকরণ

উচ্চতর গণিত ১ম পত্র অধ্যায় ৯+১০

1.	$\frac{d}{dx}(x^n) = nx^{n-1}$	$\int x^n dx = \frac{x^{n+1}}{n+1} + c \; where \; n \neq -1$
2.	$\frac{d}{dx}(e^{mx}) = me^{mx}$	$\int e^{mx} dx = \frac{e^{mx}}{m} + c$
3.	$\frac{d}{dx}(a^x) = a^x lna$	$\int a^x dx = \frac{a^x}{lna} + c$
4.	$\frac{d}{dx}(lnx) = \frac{1}{x}$	$\int \frac{1}{x} dx = lnx + c$
5.	$\frac{d}{dx}(\ sinx) = cosx$	$\int cosx \; dx = sinx + c$
6.	$\frac{d}{dx}(cosx) = -sinx$	$\int sinx \; dx = -cosx + \mathrm{c}$
7.	$\frac{d}{dx}(tanx) = \sec^2 x$	$\int \sec^2 x \; dx = tanx + c$
8.	$\frac{d}{dx}(cotx) = -cosec^2 x$	$\int cosec^2 x \; dx = -cotx + c$
9.	$\frac{d}{dx}(secx\ ) = secx \; tanx$	$\int secx \; tanx \; dx = secx + c$
10.	$\frac{d}{dx}(cosecx) = -cosecx \; cotx$	$\int cosecx \; cotx \; dx = -cosecx + c$
11	$\frac{d}{dx}(\sin^{-1} x) = \frac{1}{\sqrt{1-x^2}}$	$\int \frac{1}{\sqrt{1-x^2}} dx = \sin^{-1} x + c$
12.	$\frac{d}{dx}(\cos^{-1} x) = -\frac{1}{\sqrt{1-x^2}}$	$\int -\frac{1}{\sqrt{1-x^2}} dx = \cos^{-1} x + c$
13.	$\frac{d}{dx}(\tan^{-1} x) = \frac{1}{1+x^2}$	$\int \frac{1}{1+x^2} dx = \tan^{-1} x + c$
14.	$\frac{d}{dx}(\cot^{-1} x) = -\frac{1}{1+x^2}$	$\int -\frac{1}{1+x^2} dx = \cot x + c$
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.	$\frac{d}{dx}(cosec^{-1}x) = -\frac{1}{x\sqrt{x^2-1}}$	$\int -\frac{1}{x\sqrt{x^2-1}} dx = cosec^{-1}x + c$
18.	$\int \frac{dx}{a^2-x^2} = \frac{1}{2a}\ln\left\|\frac{a+x}{a-x}\right\| + c$	$\int \frac{dx}{x^2-a^2} = \frac{1}{2a} ln\left\|\frac{x-a}{x+a}\right\| + c$
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.	$\int uvdx = u\int vdx - \int\{\frac{du}{dx}\int vdx\}\, dx$	$\int \sqrt{a^2-x^2}\; dx = \frac{x\sqrt{a^2-x^2}}{2} + \frac{a^2}{2}\sin^{-1} x + c$