সৃষ্টি কলেজ অব টাঙ্গাইল

প্রয়োজনীয় সূত্র - যোগজীকরণ/অন্তরীকরণ

যোগজীকরণের ফলাফলের সাথে অবশ্যই c যুক্ত করবে।

$\frac{a}{dx}(x^n) = nx^{n-1}$ $x^n dx = \frac{x^{n+1}}{n+1}$ $e^{mx}dx = \frac{e^{mx}}{m}$ $a^x dx = \frac{a^x}{lna}$ $\frac{d}{dx}(e^{mx}) = me^{mx}$ $\frac{d}{dx}(a^x) = a^x lna$ $\frac{d}{dx}(lnx) = \frac{1}{x}$ $\int \frac{1}{x} dx = lnx$ $\frac{d}{dx}(\sin x) = \cos x$ cosx dx = sinx $\frac{d}{dx}(\cos x) = -\sin x$ sinx dx = -cosx $\frac{d}{dx}(tanx) = \sec^2 x$ $\sec^2 x \ dx = tanx$ $\frac{d}{dx}(cotx) = -cosec^2x$ $cosec^2x dx = -cotx$ $\frac{d}{dx}(secx) = secx \ tanx$ secx tanx dx = secx $\frac{d}{dx}(cosecx) = -cosecx \ cotx$ $cosecx \ cotx \ dx = -cosecx$ $\frac{d}{dx}(\sin^{-1}x) = \frac{1}{\sqrt{1-x^2}}$ $\int \frac{dx}{\sqrt{1-x^2}} = \sin^{-1} x$ $\int -\frac{dx}{\sqrt{1-x^2}} = \cos^{-1} x$ $\frac{d}{dx}(\cos^{-1}x) = -\frac{1}{\sqrt{1-x^2}}$ $\frac{d}{dx}\tan^{-1}x = \frac{1}{1+x^2}$ $\frac{1}{1+x^2}dx = \tan^{-1}x$ $\int_{1}^{1} \frac{-1}{1 = x^2} dx = \cot^{-1} x$ $\frac{d}{dx}\cot^{-1}x = -\frac{1}{1+x^2}$ $\frac{d}{dx}\sec^{-1}x = \frac{1}{x\sqrt{x^2 - 1}} \left| \int \frac{dx}{x\sqrt{x^2 - 1}} = \sec^{-1}x \right|$ $\frac{d}{dx}cosec^{-1}x = \frac{-1}{x\sqrt{x^2 - 1}} \left| \int \frac{-dx}{x\sqrt{x^2 - 1}} = cosec^{-1}x \right|$ $uvdx = u \int vdx - \int \left\{ \frac{d}{dx} u \int vdx \right\} dx$ $\int \frac{dx}{a^2 - x^2} = \frac{1}{2a} \ln \left| \frac{a + x}{a - x} \right| \int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \left| \frac{x - a}{x + a} \right|$ $\int \frac{dx}{\sqrt{x^2 - a^2}} = \ln\left|x + \sqrt{x^2 - a^2}\right| + c$ $\int \frac{dx}{\sqrt{x^2 + a^2}} = \ln \left| x + \sqrt{x^2 + a^2} \right|$

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$$\frac{d}{dx}(x^n) = nx^{n-1} \qquad \int x^n dx = \frac{x^{n+1}}{n+1}$$

$$\frac{d}{dx}(e^{mx}) = me^{mx} \qquad \int e^{mx} dx = \frac{e^{mx}}{m}$$

$$\frac{d}{dx}(a^x) = a^x \ln a \qquad \int a^x dx = \frac{a^x}{\ln a}$$

$$\frac{d}{dx}(\ln x) = \frac{1}{x} \qquad \int \frac{1}{x} dx = \ln x$$

$$\frac{d}{dx}(\sin x) = \cos x \qquad \int \cos x dx = \sin x$$

$$\frac{d}{dx}(\cos x) = -\sin x \qquad \int \sin x dx = -\cos x$$

$$\frac{d}{dx}(\tan x) = \sec^2 x \qquad \int \sec^2 x dx = \tan x$$

$$\frac{d}{dx}(\cot x) = -\csc^2 x \qquad \int \csc^2 x dx = -\cot x$$

$$\frac{d}{dx}(\sec x) = \sec x \tan x \qquad \int \sec x \tan x dx = \sec x$$

$$\frac{d}{dx}(\cos x) = -\csc x \cot x \qquad \int \csc x \cot x dx = -\csc x$$

$$\frac{d}{dx}(\cos^{-1}x) = \frac{1}{\sqrt{1-x^2}} \qquad \int \frac{dx}{\sqrt{1-x^2}} = \sin^{-1}x$$

$$\frac{d}{dx}(\cos^{-1}x) = -\frac{1}{\sqrt{1-x^2}} \qquad \int \frac{1}{1+x^2} dx = \tan^{-1}x$$

$$\frac{d}{dx}\cot^{-1}x = \frac{1}{1+x^2} \qquad \int \frac{1}{1+x^2} dx = \cot^{-1}x$$

$$\frac{d}{dx}\cot^{-1}x = \frac{1}{1+x^2} \qquad \int \frac{1}{1+x^2} dx = \cot^{-1}x$$

$$\frac{d}{dx}\sec^{-1}x = \frac{1}{x\sqrt{x^2-1}} \qquad \int \frac{dx}{x\sqrt{x^2-1}} = \sec^{-1}x$$

$$\int uvdx = u \int vdx - \int {\frac{d}{dx}u \int vdx} dx$$

$$\int \frac{dx}{a^2-x^2} = \frac{1}{2a}\ln{|\frac{a+x}{a-x}|} \qquad \int \frac{dx}{x^2-a^2} = \frac{1}{2a}|\frac{x-a}{x+a}|$$

$$\int \frac{dx}{\sqrt{x^2-a^2}} = \ln{|x+\sqrt{x^2-a^2}|} + c$$

$$\int \frac{dx}{\sqrt{x^2-a^2}} = \ln{|x+\sqrt{x^2-a^2}|}$$