Module - 4 Integral Calculus

List of Standard Integrals

(1). $\int x^n dx = \frac{x^{n+1}}{n+1}$ $(n \neq -1)$ (2). $\int \frac{1}{x} dx = \log x$

(3). $\int e^x dx = e^x$ (4) $\int \sin x dx = -\cos x$

(5). $\int \cos x dx = \sin x$ (6). $\int \sec^2 x dx = \tan x$

(7). $\int \operatorname{cosec}^2 x dx = -\cot x$ (8). $\int \sec x \tan x dx = \sec x$

(9). $\int \operatorname{cosec} x \cot x dx = -\operatorname{cosec} x$ (10). $\int \tan x dx = \log(\sec x$

(11). $\int \cot x dx = \log(\sin x)$

(12). $\int \sec x dx = \log(\sec x + \tan x)$

(13). $\int \frac{1}{\sqrt{a^2 - x^2}} dx = \sin^{-1}(x/a)$

(14). $\int \frac{1}{\sqrt{x^2 + a^2}} dx = \sinh^{-1}(x/a)$

(15). $\int \frac{1}{\sqrt{x^2 - a^2}} dx = \cosh^{-1}(x/a)$

(16). $\int \frac{1}{a^2 + x^2} dx = \frac{1}{a}\tan^{-1}(x/a)$

(17). $\int \sinh x dx = \cosh x$ (20). $\int \cosh x dx = \sinh x$

(18). $\int \tanh x dx = \log \cosh x$ (21). $\int \coth x dx = \log \sinh x$

(19). $\int \operatorname{sech} x \tanh x = -\operatorname{sech} x$ (22). $\int \operatorname{sech}^2 x dx = \tanh x$.