

TABLE OF INTEGRALS

ELEMENTARY FORMS

	1 $\int u dv = uv - \int v du$	2 $\int u^n du = \frac{1}{n+1} u^{n+1} + C$ if $n \neq -1$
3 $\int \frac{du}{u} = \ln u + C$	4 $\int e^u du = e^u + C$	5 $\int a^u du = \frac{a^u}{\ln a} + C$
6 $\int \sin u du = -\cos u + C$	7 $\int \cos u du = \sin u + C$	8 $\int \sec^2 u du = \tan u + C$
9 $\int \csc^2 u du = -\cot u + C$	10 $\int \sec u \tan u du = \sec u + C$	
11 $\int \csc u \cot u du = -\csc u + C$	12 $\int \tan u du = \ln \sec u + C$	13 $\int \cot u du = -\ln \csc u + C$
14 $\int \sec u du = \ln \sec u + \tan u + C$	15 $\int \csc u du = -\ln \csc u + \cot u + C$	16 $\int \frac{du}{\sqrt{a^2 - u^2}} = \sin^{-1} \frac{u}{a} + C$
17 $\int \frac{du}{a^2 + u^2} = \frac{1}{a} \tan^{-1} \frac{u}{a} + C$	18 $\int \frac{du}{a^2 - u^2} = \frac{1}{2a} \ln \left \frac{u+a}{u-a} \right + C$	19 $\int \frac{du}{u\sqrt{u^2 - a^2}} = \frac{1}{a} \sec^{-1} \left \frac{u}{a} \right + C$

TRIGONOMETRIC FORMS

20 $\int \sin^2 u du = \frac{1}{2}u - \frac{1}{4}\sin 2u + C$	21 $\int \cos^2 u du = \frac{1}{2}u + \frac{1}{4}\sin 2u + C$
22 $\int \tan^2 u du = \tan u - u + C$	23 $\int \cot^2 u du = -\cot u - u + C$
24 $\int \sin^3 u du = -\frac{1}{3}(2 + \sin^2 u)\cos u + C$	25 $\int \cos^3 u du = \frac{1}{3}(2 + \cos^2 u)\sin u + C$
26 $\int \tan^3 u du = \frac{1}{2}\tan^2 u + \ln \cos u + C$	27 $\int \cot^3 u du = -\frac{1}{2}\cot^2 u - \ln \sin u + C$
28 $\int \sec^3 u du = \frac{1}{2}\sec u \tan u + \frac{1}{2}\ln \sec u + \tan u + C$	29 $\int \csc^3 u du = -\frac{1}{2}\csc u \cot u + \frac{1}{2}\ln \csc u - \cot u + C$
30 $\int \sin au \sin bu du = \frac{\sin(a-b)u}{2(a-b)} - \frac{\sin(a+b)u}{2(a+b)} + C$ if $a^2 \neq b^2$	31 $\int \cos au \cos bu du = \frac{\sin(a-b)u}{2(a-b)} + \frac{\sin(a+b)u}{2(a+b)} + C$ if $a^2 \neq b^2$
32 $\int \sin au \cos bu du = -\frac{\cos(a-b)u}{2(a-b)} - \frac{\cos(a+b)u}{2(a+b)} + C$ if $a^2 \neq b^2$	
33 $\int \sin^n u du = -\frac{1}{n}\sin^{n-1} u \cos u + \frac{n-1}{n} \int \sin^{n-2} u du$	34 $\int \cos^n u du = \frac{1}{n}\cos^{n-1} u \sin u + \frac{n-1}{n} \int \cos^{n-2} u du$
35 $\int \tan^n u du = \frac{1}{n-1}\tan^{n-1} u - \int \tan^{n-2} u du$ if $n \neq 1$	36 $\int \cot^n u du = -\frac{1}{n-1}\cot^{n-1} u - \int \cot^{n-2} u du$ if $n \neq 1$
37 $\int \sec^n u du = \frac{1}{n-1}\sec^{n-2} u \tan u + \frac{n-2}{n-1} \int \sec^{n-2} u du$ if $n \neq 1$	
38 $\int \csc^n u du = -\frac{1}{n-1}\csc^{n-2} u \cot u + \frac{n-2}{n-1} \int \csc^{n-2} u du$ if $n \neq 1$	
39a $\int \sin^n u \cos^m u du = -\frac{\sin^{n-1} u \cos^{m+1} u}{n+m} + \frac{n-1}{n+m} \int \sin^{n-2} u \cos^m u du$ if $n \neq -m$	
39b $\int \sin^n u \cos^m u du = \frac{\sin^{n+1} u \cos^{m-1} u}{n+m} + \frac{m-1}{n+m} \int \sin^n u \cos^{m-2} u du$ if $m \neq -n$	
40 $\int u \sin u du = \sin u - u \cos u + C$	41 $\int u \cos u du = \cos u + u \sin u + C$
42 $\int u^n \sin u du = -u^n \cos u + n \int u^{n-1} \cos u du$	43 $\int u^n \cos u du = u^n \sin u - n \int u^{n-1} \sin u du$