

## SOME INTEGRALS

$$(1) \int \cos x e^{\sin x} dx$$

$$(2) \int x^2 e^x dx$$

$$(3) \int \cot x dx$$

$$(4) \int x \ln x^2 dx$$

$$(5) \int \sin^2 x \sin 2x dx$$

$$(6) \int \sqrt{2x+1} dx$$

$$(7) \int \ln(1+x^2) dx$$

$$(8) \int \cos x \ln(\sin x) dx$$

$$(9) \int \frac{1}{x\sqrt{\ln x}} dx$$

$$(10) \int x \sec^2 x dx$$

$$(11) \int \frac{1}{\sqrt{x^2-1}} dx$$

$$(12) \int x \sqrt{1-x^4} dx$$

$$(13) \int \sin \sqrt{x} dx$$

$$(14) \int x^2 e^{-x^3} dx$$

$$(15) \int \sin x \cos^3 x dx$$

$$(16) \int \frac{1}{x^2-1} dx$$

$$(17) \int (\ln x)^2 dx$$

$$(18) \int \sec^4 x \tan^2 x dx$$

$$(19) \int \frac{\sin \sqrt{x}}{\sqrt{x}} dx$$

$$(20) \int \frac{x^4+1}{x(x^2+1)^2} dx$$

$$(21) \int \csc^6 x dx$$

$$(22) \int \tan^3 x \sin^2 x dx$$

$$(23) \int \csc x dx$$

$$(24) \int \frac{\sqrt{x+4}}{x} dx$$

$$(25) \int \frac{10}{(x-1)(x^2+9)} dx$$

$$(26) \int e^x \sin x dx$$

$$(27) \int \cos 4x \sin 2x dx$$

$$(28) \int \frac{x}{\sqrt{3-2x-x^2}} dx$$

$$(29) \int \tan^3 x dx$$

$$(30) \int \sin^5 x \cos^2 x dx$$

$$(31) \int x \arctan x dx$$

$$(32) \int \frac{x^2}{x+4} dx$$

$$(33) \int \tan^2 x \sin x dx$$

$$(34) \int \frac{e^{1/x}}{x^2} dx$$

$$(35) \int \frac{1}{1+\sin x - \cos x} dx$$

$$(36) \int \cot^2 x \csc^2 x dx$$

$$(37) \int \frac{1}{\sqrt{1-x^2}} dx$$

$$(38) \int \arcsin x dx$$

$$(39) \int 2x(x^2+3)^8 dx$$

$$(40) \int \sin(\ln x) dx$$

$$(41) \int \sec^3 x \csc x dx$$

$$(42) \int x^3 \sqrt{x^2+4} dx$$

$$(43) \int \frac{5x^2+3x-2}{x^3+2x^2} dx$$

$$(44) \int \frac{1}{x^{1/3}+x^{1/4}} dx$$

$$(45) \int \frac{1}{3-5\sin x} dx$$

$$(46) \int x(x+1)^{24} dx$$

$$(47) \int \frac{1}{x\sqrt{x+1}} dx$$

$$(48) \int \frac{x^3}{(x+1)^3} dx$$

$$(49) \int (\sqrt{2^x} + \log_{\pi} x) dx$$

$$(50) \int \csc^4 x \cot^3 x dx$$

$$(51) \int x^5 \sqrt{1+x^2} dx$$

$$(52) \int x^7 \sin x^4 dx$$

$$(53) \int \frac{x^2-x+6}{x(x^2+3)} dx$$

$$(54) \int \frac{1}{x^2+2x+4} dx$$

$$(55) \int x \ln \sqrt{x} dx$$

$$(56) \int \frac{x-1}{x^2+4x+5} dx$$

$$(57) \int \arctan x dx$$

(58)  $\int \frac{1}{1 + \sqrt{x}} dx$

(59)  $\int x^3 \ln x dx$

(60)  $\int \sec^2 x \csc^2 x dx$

(61)  $\int \frac{1}{(x^2 + 1)^2} dx$

(62)  $\int \frac{1}{x(1 + (\ln x)^2)} dx$

(63)  $\int (x^3 + \sqrt{x} - x^{-5/7} + x^\pi) dx$

(64)  $\int \sin^6 x dx$

(65)  $\int \frac{\arctan x}{1 + x^2} dx$

(66)  $\int \frac{1}{\sqrt{x^2 - 16}} dx$

(67)  $\int \frac{1}{1 - x^2} dx$

(68)  $\int \sin^4 x \cos^3 x dx$

(69)  $\int \frac{1}{x^3 - 3x^2 + 3x - 1} dx$

(70)  $\int \frac{\cos x}{\sqrt{1 + \sin^2 x}} dx$

(71)  $\int \frac{1}{x^2(x - 1)^2} dx$

(72)  $\int \frac{1}{3 \sin x - 4 \cos x} dx$

(73)  $\int \frac{\ln(x + 1)}{\sqrt{x + 1}} dx$

(74)  $\int \frac{x}{\sqrt{1 - 4x^2}} dx$

(75)  $\int \cot^3 x \cos x dx$

(76)  $\int \frac{e^{2\sqrt{x}}}{\sqrt{x}} dx$

(77)  $\int \sec x \csc x dx$

(78)  $\int \frac{1}{x^3 - 1} dx$

(79)  $\int \frac{\sqrt{9 - x^2}}{x^2} dx$

(80)  $\int \cot^2 x \csc x dx$

(81)  $\int x^{-3/4}(x^{1/4} + 1)^{-2} dx$

(82)  $\int \frac{x^3}{(x^2 + 1)^{1/3}} dx$

(83)  $\int \sin^2 x \cos^2 x dx$

(84)  $\int \frac{x^3}{(x^2 - 1)^9} dx$

(85)  $\int \frac{x^3}{(4x^2 + 9)^{3/2}} dx$

(86)  $\int \sec^3 x dx$

(87)  $\int \frac{1}{2 \sin x + \sin 2x} dx$

(88)  $\int \frac{x - 1}{x^2 + 3x + 2} dx$

(89)  $\int \sec^3 x \tan^3 x dx$

(90)  $\int \frac{1}{\sqrt{x^{3/2} + x}} dx$

(91)  $\int \frac{x - 3}{(x^2 + 2x + 4)^2} dx$

(92)  $\int \frac{1}{\sqrt{x^2 + 1}} dx$

(93)  $\int \sqrt{\frac{1 - x}{1 + x}} dx$

(94)  $\int \frac{\sqrt{x}}{x^2 + x} dx$

(95)  $\int \frac{1}{|x|\sqrt{x^2 - 1}} dx$

(96)  $\int \cos 2x \sin 3x dx$

(97)  $\int \frac{1 - \cos x}{1 + \sin x} dx$

(98)  $\int \frac{1}{e^x - 4e^{-x}} dx$

(99)  $\int \sin x^2 dx$

(100)  $\int e^{x^2} dx$

- (1)  $e^{\sin x} + C$
- (2)  $e^x(x^2 - 2x + 2) + C$
- (3)  $\ln |\sin x| + C$
- (4)  $\frac{1}{2}x^2(\ln x^2 - 1) + C$
- (5)  $\frac{1}{2} \sin^4 x + C$
- (6)  $\frac{1}{3}(2x + 1)^{3/2} + C$
- (7)  $x \ln(1 + x^2) - 2x + 2 \arctan x + C$
- (8)  $\sin x \ln(\sin x) - \sin x + C$
- (9)  $2\sqrt{\ln x} + C$
- (10)  $x \tan x - \ln |\sec x| + C$
- (11)  $\ln |x + \sqrt{x^2 - 1}| + C$
- (12)  $\frac{1}{4} \arcsin x^2 + \frac{1}{4}x^2\sqrt{1 - x^4} + C$
- (13)  $-2\sqrt{x} \cos \sqrt{x} + 2 \sin \sqrt{x} + C$
- (14)  $-\frac{1}{3}e^{-x^3} + C$
- (15)  $-\frac{1}{4} \cos^4 x + C$
- (16)  $\frac{1}{2} \ln |x - 1| - \frac{1}{2} \ln |x + 1| + C$
- (17)  $x(\ln x)^2 - 2x \ln x + 2x + C$
- (18)  $\frac{1}{5} \tan^5 x + \frac{1}{3} \tan^3 x + C$
- (19)  $-2 \cos \sqrt{x} + C$
- (20)  $\ln |x| + \frac{1}{x^2+1} + C$
- (21)  $-\cot x - \frac{2}{3} \cot^3 x - \frac{1}{5} \cot^5 x + C$
- (22)  $\frac{1}{2} \sec^2 x + 2 \ln |\cos x| - \frac{1}{2} \cos^2 x + C$
- (23)  $-\ln |\csc x + \cot x| + C$
- (24)  $2\sqrt{x+4} + 2 \ln |\sqrt{x+4} - 2| - 2 \ln |\sqrt{x+4} + 2| + C$
- (25)  $\ln |x - 1| - \frac{1}{2} \ln |x^2 + 9| - \frac{1}{3} \arctan \frac{x}{3} + C$
- (26)  $\frac{1}{2}e^x(\sin x - \cos x) + C$
- (27)  $\frac{1}{2} \cos 2x - \frac{1}{3} \cos^3 2x + C$
- (28)  $-\sqrt{3 - 2x - x^2} - \arcsin(\frac{x+1}{2}) + C$
- (29)  $\frac{1}{2} \sec^2 x + \ln |\cos x| + C$
- (30)  $-\frac{1}{3} \cos^3 x + \frac{2}{5} \cos^5 x - \frac{1}{7} \cos^7 x + C$
- (31)  $\frac{1}{2}(\arctan x)(x^2 + 1) - \frac{1}{2}x + C$
- (32)  $\frac{1}{2}x^2 - 4x + 16 \ln |x + 4| + C$
- (33)  $\sec x + \cos x + C$
- (34)  $-e^{1/x} + C$
- (35)  $\frac{1}{2} \ln |\csc 2x - \cot 2x| - \frac{1}{2} \ln |\sec x + \tan x| + \frac{1}{2} \ln |\csc x - \cot x| + C$
- (36)  $-\frac{1}{3} \cot^3 x + C$
- (37)  $\arcsin x + C$

(38)  $x \arcsin x + \sqrt{1-x^2} + C$

(39)  $\frac{1}{9}(x^2+3)^9 + C$

(40)  $\frac{1}{2}x(\sin(\ln x) - \cos(\ln x))$

(41)  $\ln|\tan x| + \frac{1}{2}\sec^2 x + C$

(42)  $\frac{1}{5}(x^2+4)^{5/2} - \frac{4}{3}(x^2+4)^{3/2} + C$

(43)  $2\ln|x| + \frac{1}{x} + 3\ln|x+2| + C$

(44)  $12 \left[ \frac{x^{8/12}}{8} - \frac{x^{7/12}}{7} + \frac{x^{6/12}}{6} - \frac{x^{5/12}}{5} + \frac{x^{4/12}}{4} - \frac{x^{3/12}}{3} + \frac{x^{2/12}}{2} - x^{1/12} + \ln|x^{1/12} + 1| \right] + C$

(45)  $\frac{1}{4}\ln|(\tan \frac{1}{2}x) - 3| - \frac{1}{4}\ln|3(\tan \frac{1}{2}x) - 1| + C$

(46)  $\frac{1}{26}(x+1)^{26} - \frac{1}{25}(x+1)^{25} + C$

(47)  $\ln|\sqrt{x+1} - 1| - \ln|\sqrt{x+1} + 1| + C$

(48)  $x+1 - 3\ln|x+1| - 3(x+1)^{-1} + \frac{1}{2}(x+1)^{-2} + C$

(49)  $\frac{\sqrt{2}^x}{\ln \sqrt{2}} + \frac{1}{\ln \pi}(x \ln x - x) + C$

(50)  $-\frac{1}{6}\cot^6 x - \frac{1}{4}\cot^4 x + C$

(51)  $\frac{1}{7}(x^2+1)^{7/2} - \frac{2}{5}(x^2+1)^{5/2} + \frac{1}{3}(x^2+1)^{3/2} + C$

(52)  $-\frac{1}{4}x^4 \cos x^4 + \frac{1}{4}\sin x^4 + C$

(53)  $2\ln|x| - \frac{1}{2}\ln|x^2+3| - \frac{1}{\sqrt{3}}\arctan \frac{x}{\sqrt{3}} + C$

(54)  $\frac{1}{\sqrt{3}}\arctan \frac{x+1}{\sqrt{3}} + C$

(55)  $\frac{1}{2}x^2 \ln \sqrt{x} - \frac{1}{8}x^2 + C$

(56)  $\frac{1}{2}\ln|x^2+4x+5| - 3\arctan(x+2) + C$

(57)  $x \arctan x - \frac{1}{2}\ln|x^2+1| + C$

(58)  $2(\sqrt{x}+1) - 2\ln|\sqrt{x}+1| + C$

(59)  $\frac{1}{4}x^4 \ln|x| - \frac{1}{16}x^4 + C$

(60)  $-2\cot 2x + C = \tan x - \cot x + C$

(61)  $\frac{1}{2}\arctan x + \frac{x}{2(x^2+1)} + C$

(62)  $\arctan(\ln x) + C$

(63)  $\frac{1}{4}x^4 + \frac{2}{3}x^{3/2} - \frac{7}{2}x^{2/7} + \frac{1}{\pi+1}x^{\pi+1} + C$

(64)  $\frac{5}{16}x - \frac{1}{4}\sin 2x + \frac{3}{64}\sin 4x + \frac{1}{48}\sin^3 2x + C$

(65)  $\frac{1}{2}(\arctan x)^2 + C$

(66)  $\ln \left| \frac{x}{4} + \frac{\sqrt{x^2-16}}{4} \right| + C$

(67)  $\frac{1}{2}\ln(1+x) - \frac{1}{2}\ln(1-x) + C$

(68)  $\frac{1}{5}\sin^5 x - \frac{1}{7}\sin^7 x + C$

(69)  $-\frac{1}{2}(x-1)^{-2} + C$

(70)  $\ln|\sqrt{1+\sin^2 x} + \sin x| + C$

(71)  $-\frac{1}{x} - \frac{1}{x-1} - 2\ln|x-1| + 2\ln|x| + C$

(72)  $\frac{1}{5}\ln|(2\tan \frac{1}{2}x) - 1| - \frac{1}{5}\ln|(\tan \frac{1}{2}x) + 2| + C$

- (73)  $2\sqrt{x+1} \cdot \ln|x+1| - 4\sqrt{x+1} + C$
- (74)  $-\frac{1}{4}\sqrt{1-4x^2} + C$
- (75)  $-\frac{1}{2}\csc x \cot x - \frac{3}{2}\ln|\csc x - \cot x| - \cos x + C$
- (76)  $e^{2\sqrt{x}} + C$
- (77)  $\ln|\csc 2x - \cot 2x| + C$
- (78)  $\frac{1}{3}\ln|x-1| - \frac{1}{6}\ln|x^2+x+1| - \frac{1}{\sqrt{3}}\arctan\left(\frac{2x+1}{\sqrt{3}}\right) + C$
- (79)  $-\frac{\sqrt{9-x^2}}{x} - \arcsin\frac{x}{3} + C$
- (80)  $-\frac{1}{2}\csc x \cot x - \frac{1}{2}\ln|\csc x - \cot x| + C$
- (81)  $\frac{-4}{x^{1/4}+1} + C$
- (82)  $\frac{3}{10}(x^2+1)^{5/3} - \frac{3}{4}(x^2+1)^{2/3} + C$
- (83)  $\frac{x}{8} - \frac{1}{32}\sin 4x + C$
- (84)  $-\frac{1}{14}(x^2-1)^{-7} - \frac{1}{16}(x^2-1)^{-8} + C$
- (85)  $\frac{2x^2+9}{8\sqrt{4x^2+9}} + C$
- (86)  $\frac{1}{2}\sec x \tan x + \frac{1}{2}\ln|\sec x + \tan x| + C$
- (87)  $-\frac{1}{4}\csc x \cot x + \frac{1}{4}\ln|\csc x - \cot x| + \frac{1}{4}\csc^2 x + C$
- (88)  $3\ln|x+2| - 2\ln|x+1| + C$
- (89)  $\frac{1}{5}\sec^5 x - \frac{1}{3}\sec^3 x + C$
- (90)  $4\sqrt{\sqrt{x}+1} + C$
- (91)  $\frac{-4x-7}{6(x^2+2x+4)} - \frac{2\sqrt{3}}{9}\arctan\left(\frac{x+1}{\sqrt{3}}\right) + C$
- (92)  $\ln|x+\sqrt{x^2+1}| + C$
- (93)  $\arcsin x + \sqrt{1-x^2} + C$
- (94)  $2\operatorname{arctan}\sqrt{x} + C$
- (95)  $\operatorname{arcsec} x + C$
- (96)  $-\frac{8}{5}\cos^5 x + 2\cos^3 x - \cos x + C$
- (97)  $\tan x - \ln|\sec x + \tan x| - \sec x + \ln|\sec x| + C$
- (98)  $\frac{1}{4}\ln\left|\frac{e^x-2}{e^x+2}\right| + C$
- (99)  $\sum_{n=0}^{\infty} \left[ \frac{(-1)^n}{(4n+3)(2n+1)!} x^{4n+3} \right] + C$
- (100)  $\sum_{n=0}^{\infty} \left[ \frac{x^{2n+1}}{(2n+1)n!} \right] + C$