

Integration Tables

The integration tables, containing over 5800 formulas, are divided into three categories:

1. Indefinite Integrals;
2. Finite Range Definite Integrals;
3. Infinite Range Definite integrals.

The constant of integration in the case of indefinite integrals is intentionally omitted. For the notation used in these formulas, consult the file `TablesNotation.pdf` or the notation list provided in the beginning of the Handbook. Some special items of notation are locally provided in the tables wherever they are needed. For the references used in compiling these tables, see the file `TablesBibliography.pdf`. To view the .pdf files use Acrobat Reader 5.0 or higher.

Indefinite Integrals

The tables, identified by T1.xx, are divided into categories according to the type of integrand and the interval of integration. The list, given below, identifies the type of integrand, the interval of integration and the pdf file where the integration formulas are available. After selecting the type of the desired integrand and the interval, the formulas are found by opening the corresponding pdf file.

Integrand involving ...	File
Definitions and general formulas	T1.01.pdf
Elementary functions	T1.02.pdf
Rational functions	T1.03.pdf
Binomials $(a + bx)^k$, $k = 1, 2, 3, 4, n$	T1.04.pdf
$a + bx^2$	T1.05.pdf
$a + bx^3$ and $a^3 \pm x^3$	T1.06.pdf
$a + bx^4$ and $a^4 \pm x^4$	T1.07.pdf
$a + bx^k$	T1.08.pdf

continued

Integrand involving ...	File
$1 \pm x^n$	T1.09.pdf
$a + bx$ and $\alpha + \beta x$	T1.10.pdf
$a + bx^2 + cx^4$ and $a + bx^k + cx^{2k}$	T1.11.pdf
$a + bx + cx^2$ and powers of x	T1.12.pdf
$a + bx + cx^2$ and $\alpha + \beta x$	T1.13.pdf
$a + bx^k$ and \sqrt{x}	T1.14.pdf
$\sqrt[n]{(a + bx)^k}$ or $(a + bx)^{k/n}$	T1.15.pdf
$\sqrt{a + bx}$ and $\alpha + \beta x$	T1.16.pdf
$\sqrt{x^2 \pm a^2}$, $\sqrt{a^2 - x^2}$, $\sqrt{a + bx + cx^2}$ and integral powers of x	T1.17.pdf
$\sqrt{a + cx^2}$ and integral powers of x	T1.18.pdf
$\sqrt{a + bx + cx^2}$ and first- and second-degree polynomials	T1.19.pdf
Exponential functions	T1.20.pdf
Trigonometric functions and their powers	T1.21.pdf
Sines and cosines of multiple angles with linear and other arguments	T1.22.pdf
Rational functions of sines and cosines	T1.23.pdf
$\sqrt{a \pm b \sin x}$ or $\sqrt{a \pm b \cos x}$	T1.24.pdf
Rational functions of $\sin x$, $\cos x$, and $\sqrt{1 \pm a^2 \sin^2 x}$	T1.25.pdf
Rational functions of $\sin x$, $\cos x$, and $\sqrt{a^2 \sin^2 x - 1}$	T1.26.pdf
Powers of sines and cosines, and $\sqrt{1 - k^2 \sin^2 x}$	T1.27.pdf
Products of trigonometric functions and powers of the argument	T1.28.pdf
Trigonometric functions and exponentials	T1.29.pdf
Hyperbolic functions, their powers and products	T1.30.pdf
Rational functions of hyperbolic functions	T1.31.pdf
Algebraic functions of hyperbolic functions	T1.32.pdf
Hyperbolic functions and powers of $(a + bx)$	T1.33.pdf
Hyperbolic functions, exponentials, and powers	T1.34.pdf
Trigonometric and hyperbolic functions	T1.35.pdf
Logarithm functions	T1.36.pdf
Inverse trigonometric functions	T1.37.pdf
Inverse hyperbolic functions	T1.38.pdf

Finite-Range Definite Integrals

The tables, identified by T2.xx, are divided into categories according to the type of integrand and the interval of integration.* The list, given below, identifies the type of integrand, the interval of integration and the pdf file where the integration formulas are available. After selecting the type of the desired integrand and the interval, the formulas are found by opening the corresponding pdf file.

T2.01. Definitions and Formulas.

Interval	File
(a, b)	T2.01A.pdf

T2.02. Powers of x and binomials of the form $(a + bx)$.

Interval	File
$(0, 1)$	T2.02A.pdf
$(0, y)$	T2.02B.pdf
(a, b)	T2.02C.pdf

T2.03. Powers of x , binomials of the form $(a + bx)$ and polynomials in x .

Interval	File
$(0, 1)$	T2.03A.pdf
$(-1, 1)$	T2.03B.pdf
$(0, y)$	T2.03C.pdf

T2.04. Integrands of the form $\frac{1}{\sqrt{(a-x)(b-x)(c-x)^n}}$, $\frac{1}{\sqrt{(a-x)(b-x)^n(c-x)}}$, and $\frac{1}{\sqrt{(a-x)^n(b-x)(c-x)}}$ for $n = 0, 1, 3, 5$.

Interval	File
$(y, a), (a, y)$	T2.04A.pdf
$(y, b), (b, y)$	T2.04B.pdf
$(y, c), (c, y)$	T2.04C.pdf

* The interval, represented as an open interval, may be open, closed, or half-open.

T2.05. Integrands of the form $\frac{1}{(r-x)\sqrt{(a-x)(b-x)(c-x)}}$.

Interval	File
$(y, a), (a, y), (y, b), (b, y), (y, c), (c, y)$	T2.05A.pdf

T2.06. Integrands of the form $\frac{1}{\sqrt{(a-x)(b-x)^n(c-x)^n}}, \frac{1}{\sqrt{(a-x)^n(b-x)(c-x)^n}},$
 $\frac{1}{\sqrt{(a-x)^n(b-x)^n(c-x)}}$ for $n = 3, 5$.

Interval	File
$(y, a), (a, y), (y, b), (b, y), (y, c), (c, y)$	T2.06A.pdf

T2.07. Integrands of the form $\frac{1}{\sqrt{x(1-x)(a+bx)}}$ and $\frac{1}{\sqrt{(x-a)(x^2-2bx+c^2)}}$.

Interval	File
$(0, y), (y, 1), (y, a), (a, y)$	T2.07A.pdf

T2.08. Integrands of the form $\frac{1}{\sqrt{1-x^3}}$ and $\frac{1}{\sqrt{x^3-1}}$.

Interval	File
$(0, 1)$	T2.08A.pdf
$(y, 1), (1, y)$	T2.08B.pdf

T2.09. Integrands of the form $\sqrt{\frac{\pm(a-x)}{(b-x)^n(c-x)}}, \sqrt{\frac{\pm(b-x)}{(a-x)^n(c-x)}}$ and $\sqrt{\frac{\pm(c-x)}{(a-x)^n(b-x)}}$,
for $n = 1, 3$.

Interval	File
$(y, a), (a, y)$	T2.09A.pdf
$(y, b), (b, y)$	T2.09B.pdf
$(y, c), (c, y)$	T2.09C.pdf

T2.10. Integrands of the form $\sqrt{\pm \frac{(a-x)(b-x)}{(c-x)}}$, $\sqrt{\pm \frac{(b-x)(c-x)}{(a-x)}}$ and $\sqrt{\pm \frac{(a-x)(c-x)}{(b-x)}}$.

Interval	File
$(y, a), (a, y)$	T2.10A.pdf
$(y, b), (b, y)$	T2.10B.pdf
$(y, c), (c, y)$	T2.10C.pdf

T2.11. Integrands of the form $\frac{x^n}{(1+x^4)\sqrt{1-x^4}}$, $n = 0, 2, 4$.

Interval	File
$(0, 1)$	T2.11A.pdf

T2.12. Integrands of the form $\frac{x^n}{\sqrt{(a-x)(b-x)(c-x)(d-x)}}$, $n = 0, 1$; and $\frac{1}{x\sqrt{(a-x)(b-x)(c-x)(d-x)}}$ and $\frac{1}{(p-x)\sqrt{(a-x)(b-x)(c-x)(d-x)}}$.

Interval	File
$(y, a), (a, y)$	T2.12A.pdf
$(y, b), (b, y)$	T2.12B.pdf
$(y, c), (c, y)$	T2.12C.pdf
$(y, d), (d, y)$	T2.12D.pdf

T2.13. Integrands of the form $\frac{x^n}{\sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$, $n = 0, 2, 4$.

Interval	File
$(y, a), (a, y)$	T2.13A.pdf
$(y, b), (b, y)$	T2.13B.pdf
$(0, y), (0, 1)$	T2.13C.pdf

T2.14. Integrands of the form $\sqrt{(a^2 \pm x^2)(x^2 \pm b^2)}$ and $\sqrt{(a^2 \pm x^2)(x^2 \pm b^2)}$.

Interval	File
$(y, a), (a, y)$	T2.14A.pdf
$(y, b), (b, y)$	T2.14B.pdf
$(0, y)$	T2.14C.pdf

T2.15. Integrands of the form $\frac{1}{x^2 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$.

Interval	File
$(y, a), (a, y)$	T2.15A.pdf
$(y, b), (b, y)$	T2.15B.pdf

T2.16. Integrands of the form $\frac{1}{(\pm p \mp x^2)^2 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$.

Interval	File
$(y, a), (a, y)$	T2.16A.pdf
$(y, b), (b, y)$	T2.16B.pdf
$(0, y)$	T2.16C.pdf

T2.17. Integrands of the form $\frac{x^n}{\sqrt{(a^2 \pm x^2)^3(b^2 \pm x^2)}}$ and $\frac{x^n}{\sqrt{(a^2 \pm x^2)(b^2 \pm x^2)^3}}$
for $n = 0, 2$.

Interval	File
$(y, a), (a, y)$	T2.17A.pdf
$(y, b), (b, y)$	T2.17B.pdf
$(0, y)$	T2.17C.pdf

T2.18. Integrands of the form $\frac{1}{x^4 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$.

Interval	File
$(y, a), (a, y)$	T2.18A.pdf
$(y, b), (b, y)$	T2.18B.pdf

T2.19. Integrands of the form $\frac{1}{\sqrt{(a^2 \pm x^2)^5 (b^2 \pm x^2)}}$.

Interval	File
$(y, a), (a, y)$	T2.19A.pdf
$(y, b), (b, y)$	T2.19B.pdf
$(0, y)$	T2.19C.pdf

T2.20. Integrands of the form $\frac{1}{\sqrt{(a^2 \pm x^2)^3 (b^2 \pm x^2)^3}}$.

Interval	File
$(0, y)$	T2.20A.pdf

T2.21. Integrands of the form $\frac{1}{\sqrt{x^4 + 2b^2x^2 + a^4}}$.

Interval	File
(y, a)	T2.21A.pdf

T2.22. Integrands of the form $\frac{1}{\sqrt{x^4+1}}$, $\frac{1}{x^2\sqrt{x^4+1}}$, $\frac{x^2}{(x^4\pm 1)\sqrt{x^4+1}}$, $\frac{\sqrt{x^4+1}}{(x^2\pm 1)^2}$,
and $\frac{(x^2\pm 1)^2}{(x^2+2ax+a^2)\sqrt{x^4+1}}$.

Interval	File
$(0, y)$	T2.22A.pdf
$(y, 1)$	T2.22B.pdf
$(1, y)$	T2.22C.pdf
$(0, 1)$	T2.22D.pdf

T2.23. Integrands of the form $\sqrt{\frac{d-x}{(a-x)(b-x)(c-x)}}$, $\sqrt{\frac{c-x}{(a-x)(b-x)(d-x)}}$,
 $\sqrt{\frac{b-x}{(a-x)(c-x)(d-x)}}$, and $\sqrt{\frac{a-x}{(b-x)(c-x)(d-x)}}$.

Interval	File
$(y, a), (a, y)$	T2.23A.pdf
$(y, b), (b, y)$	T2.23B.pdf
$(y, c), (c, y)$	T2.23C.pdf
$(y, d), (d, y)$	T2.23D.pdf

T2.24. Integrands of the form $\sqrt{\frac{d-x}{(a-x)(b-x)(c-x)^3}}$, $\sqrt{\frac{c-x}{(a-x)(b-x)(d-x)^3}}$,
 $\sqrt{\frac{b-x}{(a-x)(c-x)(d-x)^3}}$, and $\sqrt{\frac{a-x}{(b-x)(c-x)(d-x)^3}}$, and similar
expressions with cubes of one of the factors in the denominator.

Interval	File
$(y, a), (a, y)$	T2.24A.pdf
$(y, b), (b, y)$	T2.24B.pdf
$(y, c), (c, y)$	T2.24C.pdf
$(y, d), (d, y)$	T2.24D.pdf

T2.25. Integrands of the form $\sqrt{\frac{x^2 + a^2}{x^2 \pm b^2}}$ and $\sqrt{\frac{b^2 - x^2}{a^2 \pm x^2}}$.

Interval	File
$(y, a), (a, y)$	T2.25A.pdf
$(y, b), (b, y)$	T2.25B.pdf
$(0, y)$	T2.25C.pdf

T2.26. Integrands of the form $\frac{1}{x^2} \sqrt{\frac{a^2 \pm x^2}{b^2 \pm x^2}}$.

Interval	File
$(y, a), (a, y)$	T2.26A.pdf
$(y, b), (b, y)$	T2.26B.pdf

T2.27. Integrands of the form $\sqrt{\frac{x^2 \pm b^2}{(a^2 \pm x^2)^n}}$ for $n = 1, 3$.

Interval	File
$(y, a), (a, y)$	T2.27A.pdf
$(y, b), (b, y)$	T2.27B.pdf
$(y, 1), (1, y)$	T2.27C.pdf
$(0, y)$	T2.27D.pdf

T2.28. Integrands of the form $\frac{1}{(1 + cx)^n} \sqrt{\frac{1 \pm x + x^2}{x(1 \pm x)}}$ and $\frac{1}{(1 \pm x + x^2)^n} \sqrt{\frac{x(1 \pm x)}{1 \pm x + x^2}}$
for $n = 1, 3$.

Interval	File
$(0, y)$	T2.28A.pdf

T2.29. Integrands with the fourth roots of a quadratic and a biquadratic polynomial.

Interval	File
(a, y)	T2.29A.pdf
(b, y)	T2.29B.pdf

T2.30. Integrands with the fourth roots of polynomials in the denominator, and their product with rational functions.

Interval	File
$(0, y)$	T2.30A.pdf
(b, y)	T2.30B.pdf

T2.31. Integrands involving exponential functions.

Interval	File
$(0, y)$	T2.31A.pdf
$(0, 1/2)$	T2.31B.pdf

T2.32. Integrands involving exponentials of trigonometric functions and $\ln x$.

Interval	File
$(0, \pi/2), (0, \pi), (-\pi/2, \pi/2), (0, 1)$	T2.32A.pdf

T2.33. Integrands involving exponentials and rational functions.

Interval	File
$(0, y)$	T2.33A.pdf
$(0, 1)$	T2.33B.pdf
(a, b)	T2.33C.pdf

T2.34. Integrands involving exponentials and algebraic functions.

Interval	File
$(0, y), (0, 2y), (0, 2), (-1, 1)$	T2.34A.pdf

T2.35. Integrands involving exponentials and arbitrary powers of $(a + bx)$.

Interval	File
$(0, y), (0, 2y)$	T2.35A.pdf
$(0, 1), (-1, 1)$	T2.35B.pdf
(a, b)	T2.35C.pdf

T2.36. Integrands involving exponentials and rational functions of powers of $(a + bx)$.

Interval	File
$(0, \ln 2)$	T2.36A.pdf

T2.37. Integrands involving algebraic functions of exponentials and powers of $(a + bx)$.

Interval	File
$(0, 1)$	T2.37A.pdf
$(0, y)$	T2.37B.pdf
$(0, \pi/2)$	T2.37C.pdf

T2.38. Integrands involving hyperbolic functions.

Interval	File
$(0, \pi/2)$	T2.38A.pdf
$(0, a)$	T2.38B.pdf

T2.39. Integrands involving hyperbolic functions and algebraic functions.

Interval	File
$(0, y)$	T2.39A.pdf
$(0, 1)$	T2.39B.pdf

T2.40. Integrands involving exponentials, hyperbolic functions and powers of $(a + bx)$.

Interval	File
$(0, 1)$	T2.40A.pdf

T2.41. Integrands involving sines and cosines of single and multiple arguments.

Interval	File
$(0, \pi/2)$	T2.41A.pdf
$(0, \pi)$	T2.41B.pdf
$(0, 2\pi)$	T2.41C.pdf

T2.42. Integrands involving powers of trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.42A.pdf
$(0, \pi/2)$	T2.42B.pdf

T2.43. Integrands involving powers of trigonometric functions and liner trigonometric functions.

Interval	File
$(-\pi/4, \pi/4)$	T2.43A.pdf
$(0, \pi/2)$	T2.43B.pdf
$(0, \pi)$	T2.43C.pdf
$(-\pi/2, \pi/2)$	T2.43D.pdf
$(-\pi, \pi)$	T2.43E.pdf

T2.44. Integrands involving powers of trigonometric functions and rational trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.44A.pdf
$(0, \pi/2)$	T2.44B.pdf
$(0, \pi)$	T2.44C.pdf

T2.45. Integrands involving powers of linear trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.45A.pdf
$(0, \pi/2)$	T2.45B.pdf
$(0, \pi)$	T2.45C.pdf
$(0, 2\pi)$	T2.45D.pdf
$(-\pi/4, \pi/4)$	T2.45E.pdf
$(0, y)$	T2.45F.pdf
(a, b)	T2.45G.pdf

T2.46. Integrands involving square roots of expressions containing trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.46A.pdf
$(0, \pi/2), (y, \pi/2)$	T2.46B.pdf
$(0, \pi)$	T2.46C.pdf
(y, π)	T2.46D.pdf
$(0, y)$	T2.46E.pdf

T2.47. Integrands involving different forms of powers of trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.47A.pdf
$(0, \pi/2)$	T2.47B.pdf

- T2.48.** Integrands involving trigonometric functions and powers of trigonometric functions with quadratic, cubic, biquadratic and p -th degree polynomials.

Interval	File
$(0, 1), (0, y)$	T2.48A.pdf

- T2.49.** Integrands involving trigonometric functions of arguments containing trigonometric and hyperbolic functions.

Interval	File
$(0, \pi/2)$	T2.49A.pdf
$(0, \pi)$	T2.49B.pdf

- T2.50.** Integrands involving product and division of trigonometric functions by powers of $(a + b x)$.

Interval	File
$(0, 1)$	T2.50A.pdf
$(0, y)$	T2.50B.pdf
$(0, \pi/2), (0, \pi), (0, 2n\pi)$	T2.50C.pdf

- T2.51.** Integrands involving trigonometric functions and rational polynomials of degree k , for $k = 1, 2, 3, 4, n$.

Interval	File
$(0, \pi/4)$	T2.51A.pdf
$(0, \pi/2)$	T2.51B.pdf
$(0, \pi)$	T2.51C.pdf

T2.52. Integrands involving trigonometric functions and square roots of algebraic functions.

Interval	File
$(0, 1)$	T2.52A.pdf

T2.53. Integrands involving rational functions of $(a + bx)$ and trigonometric functions.

Interval	File
$(0, \pi/4)$	T2.53A.pdf
$(0, \pi/2)$	T2.53B.pdf
$(0, \pi)$	T2.53C.pdf
$(0, 2\pi)$	T2.53D.pdf
$(-\pi/4, \pi/4)$	T2.53E.pdf
$(0, y)$	T2.53F.pdf

T2.54. Integrands involving powers of trigonometric functions and powers of $(a + bx^n)$, for $n = 1, 2, 3, 4$.

Interval	File
$(0, \pi/4)$	T2.54A.pdf
$(0, \pi/2)$	T2.54B.pdf
$(0, \pi), (0, r\pi)$	T2.54C.pdf
$(p\pi, q\pi)$	T2.54D.pdf
$(0, 1)$	T2.54E.pdf

T2.55. Integrands involving product of trigonometric functions of linear and quadratic arguments and sum of powers and square roots of $(a + bx^n)$.

Interval	File
$(0, 1)$	T2.55A.pdf
$(0, y)$	T2.55B.pdf
$(0, \pi/2)$	T2.55C.pdf

T2.56. Integrands involving product of exponentials, trigonometric functions and powers of trigonometric functions.

Interval	File
$(0, \pi/2)$	T2.56A.pdf
$(0, \pi)$	T2.56B.pdf
$(0, 2\pi)$	T2.56C.pdf
$(-\pi/2, \pi/2)$	T2.56D.pdf
$(-\pi, \pi)$	T2.56E.pdf

T2.57. Integrands involving product of exponentials and trigonometric functions of linear and quadratic arguments.

Interval	File
$(0, \pi/4)$	T2.57A.pdf
$(0, \pi/2)$	T2.57B.pdf

T2.58. Integrands involving product of trigonometric and exponential functions of trigonometric functions.

Interval	File
$(0, \pi/2)$	T2.58A.pdf
$(0, \pi)$	T2.58B.pdf
$(0, 2\pi)$	T2.58C.pdf

T2.59. Integrands involving product of trigonometric functions, exponentials and powers of x and $1/x$.

Interval	File
$(0, y)$	T2.59A.pdf
$(0, \pi/2)$	T2.59B.pdf

T2.60. Integrands involving product and quotient of trigonometric and hyperbolic functions.

Interval	File
$(0, \pi/2), (0, \pi)$	T2.60A.pdf

T2.61. Integrands involving trigonometric and hyperbolic functions and powers of $(a + bx)$.

Interval	File
$(0, 1)$	T2.61A.pdf

T2.62. Integrands involving logarithm functions.

Interval	File
$(0, 1)$	T2.62A.pdf
$(0, 1/e), (0, y), (1, e)$	T2.62B.pdf

T2.63. Integrands involving logarithm functions of complicated arguments, like $(1 + a^2/x^2)$, $(1 \pm e^{-x})$, $(1 + 2e^{-x} \cos t + e^{-2x})$, and others.

Interval	File
$(0, 1)$	T2.63A.pdf
$(0, y)$	T2.63B.pdf
$(0, \pi/4)$	T2.63C.pdf
$(0, \pi/2), (\pi/4, \pi/2)$	T2.63D.pdf
$(0, \pi), (0, 2\pi), (0, n\pi)$	T2.63E.pdf

T2.64. Integrands involving logarithm functions and rational functions.

Interval	File
$(0, 1)$	T2.64A.pdf
$(0, a), (a, b)$	T2.64B.pdf
$(0, e^{-2a})$	T2.64C.pdf

T2.65. Integrands involving logarithm functions and algebraic functions.

Interval	File
$(0, 1), (0, 1/\sqrt{2})$	T2.65A.pdf
$(0, b), (a, b)$	T2.65B.pdf

T2.66. Integrands involving logarithm functions and powers of $(a + bx)$.

Interval	File
$(0, 1)$	T2.66A.pdf

T2.67. Integrands involving product of powers of logarithm functions and rational functions.

Interval	File
$(0, 1)$	T2.67A.pdf
$(0, 1/e)$	T2.67B.pdf
(a, b)	T2.67C.pdf

T2.68. Integrands involving rational functions of $\ln x$ and powers of $(a + bx)$.

Interval	File
$(0, 1)$	T2.68A.pdf

T2.69. Integrands involving logarithm functions and powers of logarithm functions and rational functions.

Interval	File
$(0, 1)$	T2.69A.pdf
$(0, 1/2), (-1, 1)$	T2.69B.pdf
$(0, a), (-a, a), (a, b)$	T2.69C.pdf
$(0, \pi/4)$	T2.69D.pdf
$(0, \pi/2)$	T2.69E.pdf
$(0, \pi)$	T2.69F.pdf

T2.70. Integrands involving exponentials and logarithm functions.

Interval	File
$(0, 1)$	T2.70A.pdf

T2.71. Integrands involving exponentials, logarithm functions and powers of $(a+bx)$.

Interval	File
$(0, 1)$	T2.71A.pdf
$(0, 2y)$	T2.71B.pdf

T2.72. Integrands involving logarithms and exponentials.

Interval	File
$(0, 1)$	T2.72A.pdf
$(0, \pi/4)$	T2.72B.pdf
$(0, \pi/2)$	T2.72C.pdf
$(0, \pi)$	T2.72D.pdf
$(0, 2\pi)$	T2.72E.pdf
$(0, y)$	T2.72F.pdf

T2.73. Integrands involving logarithms, trigonometric functions and rational functions.

Interval	File
$(0, 1)$	T2.73A.pdf
$(0, \pi/2)$	T2.73B.pdf

T2.74. Integrands involving logarithms, trigonometric functions and exponentials.

Interval	File
$(0, \pi/2)$	T2.74A.pdf

T2.75. Integrands involving arcsin, arccos and rational functions.

Interval	File
$(0, 1)$	T2.75A.pdf
$(-1, 1)$	T2.75B.pdf

T2.76. Integrands involving arctan, arccot and rational functions.

Interval	File
$(0, 1)$	T2.76A.pdf
$(0, \pi)$	T2.76B.pdf

T2.77. Integrands involving inverse trigonometric functions and exponentials.

Interval	File
$(0, 1)$	T2.77A.pdf

T2.78. Integrands involving trigonometric and inverse trigonometric functions.

Interval	File
$(0, \pi/2)$	T2.78A.pdf
$(0, \pi)$	T2.78B.pdf

T2.79. Integrands involving inverse trigonometric and logarithms.

Interval	File
$(0, \pi/2)$	T2.79A.pdf

Infinite-Range Definite Integrals

The tables, identified by T3.xx, are divided into categories according to the type of integrand and the interval of integration. The list, given below, identifies the type of integrand, the interval of integration and the pdf file where the integration formulas are available. After selecting the type of the desired integrand and the interval, the formulas are found by opening the corresponding pdf file.

T3.01. Powers of x and binomials of the form $(a + bx)$.

Interval	File
$(0, \infty)$	T3.01A.pdf
$(1, \infty)$	T3.01B.pdf
(y, ∞)	T3.01C.pdf
$(-\infty, \infty)$	T3.01D.pdf
$(-\infty, a)$	T3.01E.pdf

T3.02. Powers of x , binomials of the form $(a + bx)$ and polynomials in x .

Interval	File
$(0, \infty)$	T3.02A.pdf
$(-\infty, \infty)$	T3.02B.pdf
$(1, \infty), (y, \infty), (a, \infty)$	T3.02C.pdf

T3.03. Integrands of the form $\frac{1}{\sqrt{(a-x)(b-x)(c-x)^n}}$, $\frac{1}{\sqrt{(a-x)(b-x)^n(c-x)}}$,
and $\frac{1}{\sqrt{(a-x)^n(b-x)(c-x)}}$ for $n = 1, 3, 5$.

Interval	File
$(y, \infty), (-\infty, y)$	T3.03A.pdf

T3.04. Integrands of the form $\frac{1}{(r-x)\sqrt{(a-x)(b-x)(c-x)}}$.

Interval	File
$(y, \infty), (-\infty, y)$	T3.04A.pdf

T3.05. Integrands of the form $\frac{1}{\sqrt{(a-x)(b-x)^n(c-x)^n}}$, $\frac{1}{\sqrt{(a-x)^n(b-x)(c-x)^n}}$,
 $\frac{1}{\sqrt{(a-x)^n(b-x)^n(c-x)}}$ for $n = 3, 5$.

Interval	File
$(y, \infty), (-\infty, y)$	T3.05A.pdf

T3.06. Integrands of the form $\frac{1}{\sqrt{1-x^3}}$, $\frac{1}{\sqrt{x^3-1}}$, $\frac{x}{\sqrt{1-x^3}}$ and $\frac{x}{\sqrt{x^3-1}}$.

Interval	File
$(-\infty, y), (y, \infty)$	T3.06A.pdf

T3.07. Integrands of the form $\sqrt{\frac{\pm(a-x)}{(b-x)^n(c-x)}}$, $\sqrt{\frac{\pm(b-x)}{(a-x)^n(c-x)}}$ and $\sqrt{\frac{\pm(c-x)}{(a-x)^n(b-x)}}$,
for $n = 1, 3$.

Interval	File
$(-\infty, y), (y, \infty)$	T3.07A.pdf

T3.08. Integrands of the form $\frac{1}{\sqrt{x^n(x-1)^n(x^2-x+1)^m}}$,
for $n = 1, 3, 5$; $m = 1, 3$.

Interval	File
(y, ∞)	T3.08A.pdf

T3.09. Integrands of the form $\frac{x^n}{\sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$, $n = 0, 2, 4$.

Interval	File
(y, ∞)	T3.09A.pdf

T3.10. Integrands of the form $\frac{1}{x^2 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$; and $\frac{1}{(ax^2 + 2bx + c)^\alpha}$
for $\alpha > \frac{1}{2}$.

Interval	File
(y, ∞)	T3.10A.pdf
$(-\infty, \infty)$	T3.10B.pdf

T3.11. Integrands of the form $\frac{1}{(\pm p \mp x^2)^2 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$.

Interval	File
(y, ∞)	T3.11A.pdf

T3.12. Integrands of the form $\frac{x^n}{\sqrt{(a^2 \pm x^2)^3(b^2 \pm x^2)}}$ and $\frac{x^n}{\sqrt{(a^2 \pm x^2)(b^2 \pm x^2)^3}}$,
for $n = 0, 2$.

Interval	File
(y, ∞)	T3.12A.pdf

T3.13. Integrands of the form $\frac{1}{x^4 \sqrt{(a^2 \pm x^2)(b^2 \pm x^2)}}$.

Interval	File
(y, ∞)	T3.13A.pdf

T3.14. Integrands of the form $\frac{1}{\sqrt{(a^2 \pm x^2)^5 (b^2 \pm x^2)}}$.

Interval	File
(y, ∞)	T3.14A.pdf

T3.15. Integrands of the form $\frac{1}{\sqrt{(a^2 \pm x^2)^3 (b^2 \pm x^2)^3}}$.

Interval	File
(y, ∞)	T3.15A.pdf

T3.16. Integrands of the form $\frac{1}{\sqrt{x^4 + 2b^2x^2 + a^4}}$, $\frac{1}{(x^2 + a^2)\sqrt{x^4 + 2b^2x^2 + a^4}}$,
 $\frac{(x^2 \pm a^2)}{\sqrt{x^4 + 2b^2x^2 + a^4}}$, $\frac{(x^2 \pm a^2)}{(x^2 + a^2)\sqrt{x^4 + 2b^2x^2 + a^4}}$, $\frac{\sqrt{x^4 + 2b^2x^2 + a^4}}{(x^2 \pm a^2)}$,
and $\frac{(x^2 \pm a^2)}{[x^4 + 2p^2x^2 + q^4]\sqrt{x^4 + 2b^2x^2 + a^4}}$.

Interval	File
(y, ∞)	T3.16A.pdf

T3.17. Integrands of the form $\frac{1}{\sqrt{x^4 + 1}}$, $\frac{1}{x^2\sqrt{x^4 + 1}}$, $\frac{x^2}{(x^4 \pm 1)\sqrt{x^4 + 1}}$, $\frac{\sqrt{x^4 + 1}}{(x^2 \pm 1)^2}$,
and $\frac{(x^2 \pm 1)^2}{(x^2 + 2ax + a^2)\sqrt{x^4 + 1}}$.

Interval	File
(y, ∞)	T3.17A.pdf

T3.18. Integrands of the form $\frac{1}{x^2} \sqrt{\frac{a^2 \pm x^2}{b^2 \pm x^2}}$.

Interval	File
(y, ∞)	T3.18A.pdf

T3.19. Integrands of the form $\sqrt{\frac{x^2 \pm b^2}{(a^2 \pm x^2)^n}}$ for $n = 1, 3$.

Interval	File
(y, ∞)	T3.19A.pdf

T3.20. Integrands involving exponential functions.

Interval	File
$(0, \infty)$	T3.20A.pdf
$(1, \infty), (y, \infty)$	T3.20B.pdf
$(-\infty, \infty)$	T3.20C.pdf

T3.21. Integrands involving exponentials of exponential functions.

Interval	File
$(0, \infty)$	T3.21A.pdf
$(-\infty, \infty)$	T3.21B.pdf

T3.22. Integrands involving exponentials of trigonometric functions and $\ln x$.

Interval	File
$(0, \infty)$	T3.22A.pdf

T3.23. Integrands involving exponentials of hyperbolic functions.

Interval	File
$(0, \infty)$	T3.23A.pdf
$(-\infty, \infty)$	T3.23B.pdf

T3.24. Integrands involving exponentials and rational functions.

Interval	File
$(0, \infty)$	T3.24A.pdf
$(-\infty, y), (-\infty, \infty)$	T3.24B.pdf
$(y, \infty), (1, \infty)$	T3.24C.pdf

T3.25. Integrands involving exponentials and algebraic functions.

Interval	File
$(0, \infty)$	T3.25A.pdf
$(1, \infty), (-1, \infty)$	T3.25B.pdf
(y, ∞)	T3.25C.pdf

T3.26. Integrands involving exponentials and arbitrary powers of $(a + b x)$.

Interval	File
$(0, \infty)$	T3.26A.pdf
(y, ∞)	T3.26B.pdf
$(1, \infty)$	T3.26C.pdf
$(-\infty, \infty)$	T3.26D.pdf

T3.27. Integrands involving exponentials and rational functions of powers of $(a + b x)$.

Interval	File
$(0, \infty)$	T3.27A.pdf
$(-\infty, \infty)$	T3.27B.pdf

T3.28. Integrands involving algebraic functions of exponentials and powers of $(a + bx)$.

Interval	File
$(0, \infty)$	T3.28A.pdf
$(-\infty, \infty)$	T3.28B.pdf
(y, ∞)	T3.28C.pdf

T3.29. Integrands involving hyperbolic functions.

Interval	File
$(0, \infty)$	T3.29A.pdf
$(-\infty, \infty)$	T3.29B.pdf

T3.30. Integrands involving hyperbolic functions and algebraic functions.

Interval	File
$(0, \infty)$	T3.30A.pdf
$(1, \infty)$	T3.30B.pdf

T3.31. Integrands involving hyperbolic functions and exponentials.

Interval	File
$(0, \infty)$	T3.31A.pdf
(y, ∞)	T3.31B.pdf
$(-\infty, \infty)$	T3.31C.pdf

T3.32. Integrands involving exponentials, hyperbolic functions and powers of $(a + bx)$.

Interval	File
$(0, \infty)$	T3.32A.pdf
$(1, \infty)$	T3.32B.pdf

- T3.33.** Integrands involving trigonometric functions and powers of trigonometric functions with quadratic, cubic, biquadratic and p -th degree polynomials.

Interval	File
$(0, \infty)$	T3.33A.pdf

- T3.34.** Integrands involving trigonometric functions of arguments containing trigonometric and hyperbolic functions.

Interval	File
$(0, \infty)$	T3.34A.pdf

- T3.35.** Integrands involving product and division of trigonometric functions by powers of $(a + b x)$.

Interval	File
$(0, \infty)$	T3.35A.pdf
$(1, \infty)$	T3.35B.pdf
(y, ∞)	T3.35C.pdf

- T3.36.** Integrands involving trigonometric functions and rational polynomials of degree k for $k = 1, 2, 3, 4, n$.

Interval	File
$(0, \infty)$	T3.36A.pdf
$(1, \infty)$	T3.36B.pdf
$(-\infty, \infty)$	T3.36C.pdf

- T3.37.** Integrands involving trigonometric functions and square roots of algebraic functions.

Interval	File
$(0, \infty)$	T3.37A.pdf
$(1, \infty), (y, \infty)$	T3.37B.pdf

T3.38. Integrands involving rational functions of $(a+bx)$ and trigonometric functions

Interval	File
$(0, \infty)$	T3.38A.pdf
$(-\infty, \infty)$	T3.38B.pdf

T3.39. Integrands involving powers of trigonometric functions and powers of $(a + bx^n)$ for $n = 1, 2, 3, 4$.

Interval	File
$(0, \infty)$	T3.39A.pdf

T3.40. Integrands involving product of trigonometric functions of linear and quadratic arguments and sum of powers and square roots of $(a + bx^n)$.

Interval	File
$(0, \infty)$	T3.40A.pdf
(y, ∞)	T3.40B.pdf
$(-\infty, \infty)$	T3.40C.pdf

T3.41. Integrands involving product of exponentials, trigonometric functions and powers of trigonometric functions.

Interval	File
$(0, \infty)$	T3.41A.pdf
$(-\infty, \infty)$	T3.41B.pdf

T3.42. Integrands involving product of exponentials and trigonometric functions of linear and quadratic arguments.

Interval	File
$(0, \infty)$	T3.42A.pdf
$(-\infty, \infty)$	T3.42B.pdf

T3.43. Integrands involving product of trigonometric functions, exponentials and powers of x and $1/x$.

Interval	File
$(0, \infty)$	T3.43A.pdf
(y, ∞)	T3.43B.pdf
$(-\infty, \infty)$	T3.43C.pdf

T3.44. Integrands involving product and quotient of trigonometric and hyperbolic functions.

Interval	File
$(0, \infty)$	T3.44A.pdf

T3.45. Integrands involving trigonometric and hyperbolic functions and powers of $(a + bx)$.

Interval	File
$(0, \infty)$	T3.45A.pdf

T3.46. Integrands involving trigonometric and hyperbolic functions and exponentials.

Interval	File
$(0, \infty)$	T3.46A.pdf

T3.47. Integrands involving trigonometric and hyperbolic functions, exponentials and powers of $(a + bx)$.

Interval	File
$(0, \infty)$	T3.47A.pdf

T3.48. Integrands involving logarithm functions.

Interval	File
(e, ∞)	T3.48A.pdf

T3.49. Integrands involving logarithm functions of complicated arguments, like $(1 + a^2/x^2)$, $(1 \pm e^{-x})$, $(1 + 2e^{-x} \cos t + e^{-2x})$, and others.

Interval	File
$(0, \infty)$	T3.49A.pdf

T3.50. Integrands involving logarithm functions and rational functions.

Interval	File
$(0, \infty)$	T3.50A.pdf
$(1, \infty)$	T3.50B.pdf

T3.51. Integrands involving logarithm functions and algebraic functions.

Interval	File
$(0, \infty)$	T3.51A.pdf
$(c, \infty), (1, \infty)$	T3.51B.pdf

T3.52. Integrands involving logarithm functions and powers of $(a + bx)$.

Interval	File
$(0, \infty)$	T3.52A.pdf
$(1, \infty), (y, \infty)$	T3.52B.pdf

T3.53. Integrands involving product of powers of logarithm functions and rational functions.

Interval	File
$(0, \infty)$	T3.53A.pdf
$(1, \infty)$	T3.53B.pdf

T3.54. Integrands involving logarithm functions and powers of logarithm functions and rational functions.

Interval	File
$(0, \infty)$	T3.54A.pdf
$(1, \infty)$	T3.54B.pdf
$(-\infty, \infty)$	T3.54C.pdf

T3.55. Integrands involving exponential and logarithm functions.

Interval	File
$(0, \infty)$	T3.55A.pdf
$(1, \infty)$	T3.55B.pdf

T3.56. Integrands involving exponentials, logarithm functions and powers of $(a+bx)$.

Interval	File
$(0, \infty)$	T3.56A.pdf
$(1, \infty)$	T3.56B.pdf

T3.57. Integrands involving logarithm and hyperbolic functions .

Interval	File
$(0, \infty)$	T3.57A.pdf
$(1, \infty)$	T3.57B.pdf

T3.58. Integrands involving logarithms and exponentials.

Interval	File
$(0, \infty)$	T3.58A.pdf

T3.59. Integrands involving logarithms, trigonometric functions and rational functions.

Interval	File
$(0, \infty)$	T3.59A.pdf

T3.60. Integrands involving logarithms, trigonometric functions and exponentials.

Interval	File
$(0, \infty)$	T3.60A.pdf

T3.61. Integrands involving arctan, arccot and rational functions.

Interval	File
$(0, \infty)$	T3.61A.pdf
$(-\infty, \infty)$	T3.61B.pdf

T3.62. Integrands involving inverse trigonometric functions and exponentials.

Interval	File
$(0, \infty)$	T3.62A.pdf

T3.63. Integrands involving arctan and hyperbolic functions.

Interval	File
$(0, \infty)$	T3.63A.pdf

T3.64. Integrands involving trigonometric and inverse trigonometric functions.

Interval	File
$(0, \infty)$	T3.64A.pdf

T3.65. Integrands involving trigonometric, inverse trigonometric and $1/x$.

Interval	File
$(0, \infty)$	T3.65A.pdf
