

100 INTEGRALES INDEFINIDAS

Recuerda que puede haber más de una solución.

$$1) \quad \int 2 \, dx = 2x + C$$

$$2) \quad \int \frac{1}{2} \, dx = \frac{1}{2}x + C$$

$$3) \quad \int \sqrt{2} \, dx = \sqrt{2}x + C$$

$$4) \quad \int 2x \, dx = x^2 + C$$

$$5) \quad \int 3x \, dx = \frac{3}{2}x^2 + C$$

$$6) \quad \int 4x \, dx = 2x^2 + C$$

$$7) \quad \int x^2 \, dx = \frac{1}{3}x^3 + C$$

$$8) \quad \int 3x^2 \, dx = x^3 + C$$

$$9) \quad \int \frac{1}{x} \, dx = \ln |x| + C$$

$$10) \quad \int e^x \, dx = e^x + C$$

$$11) \quad \int \cos(x) \, dx = \sin(x) + C$$

$$12) \quad \int (2x + 1) \, dx = x^2 + x + C$$

$$13) \quad \int (\sin(x) + \cos(x)) \, dx = -\cos(x) + \sin(x) + C$$

$$14) \quad \int \sqrt{x} \, dx = \frac{2}{3}\sqrt{x^3} + C$$

$$15) \int \sqrt[3]{x} \, dx = \frac{3}{4} \sqrt[3]{x^4} + C$$

$$16) \int \frac{1}{2\sqrt{x}} \, dx = \sqrt{x} + C$$

$$17) \int \frac{1}{1+x^2} \, dx = \arctan(x) + C$$

$$18) \int x^{100} \, dx = \frac{1}{101} x^{101} + C$$

$$19) \int 2^x \, dx = \frac{2^x}{\ln(2)} + C$$

$$20) \int (x^3 + 2x - 3) \, dx = \frac{1}{4} x^4 + x^2 - 3x + C$$

$$21) \int (x+1)^{49} \, dx = \frac{(x+1)^{50}}{50} + C$$

$$22) \int \frac{2}{2x+1} \, dx = \ln|2x+1| + C$$

$$23) \int e^{2x} \, dx = \frac{1}{2} e^{2x} + C$$

$$24) \int \cos(3x) \, dx = \frac{\sin(3x)}{3} + C$$

$$25) \int \frac{e^x}{\sqrt{1-e^{2x}}} \, dx = \arcsin(e^x) + C$$

$$26) \int \frac{e^{\arcsin x}}{\sqrt{1-x^2}} \, dx = e^{\arcsin(x)} + C$$

$$27) \int \cos(x) \sin^2(x) \, dx = \frac{\sin^3(x)}{3} + C$$

$$28) \int \tan(x) \, dx = -\ln |\cos(x)| + C$$

$$29) \int \frac{2+\ln x}{x \ln x} dx = 2\ln |\ln(x)| + \ln(x) + C$$

$$30) \int \frac{4x^3+2x^2-3x+2}{x^2} dx = 2x^2 + 2x - 3\ln|x| - \frac{2}{x} + C$$

$$31) \int \frac{\sqrt{x}+1}{\sqrt{x}-1} dx = (\sqrt{x}-1)^2 + 6(\sqrt{x}-1) + 4\ln|\sqrt{x}-1| + C$$

$$32) \int e^{\cos(3x)} \sin(3x) dx = -\frac{e^{\cos(3x)}}{3} + C$$

$$33) \int \frac{1}{x+2\sqrt{x}+1} dx = \ln|x+2\sqrt{x}+1| + \frac{2}{\sqrt{x}+1} + C$$

$$34) \int \frac{\cos(\sqrt{x})}{\sqrt{x}} dx = 2\sin(\sqrt{x}) + C$$

$$35) \int \sin(\sin(x)) \cos(x) dx = -\cos(\sin(x)) + C$$

$$36) \int \frac{\cos(\ln(x))}{x} dx = \sin(\ln(x)) + C$$

$$37) \int (\sin(x) - \sin(x) \cos^2(x) \tan^2(x)) dx = -\frac{\cos^3(x)}{3} + C$$

$$38) \int \frac{2}{(2x+3)^{101}} dx = -\frac{1}{100(2x+3)^{100}} + C$$

$$39) \int \frac{e^{1+\tan(x)}}{\cos^2(x)} dx = e^{1+\tan(x)} + C$$

$$40) \int (x^2 + x + 2)^2 dx = \frac{x^5}{5} + \frac{x^4}{2} + \frac{5x^3}{3} + 2x^2 + 4x + C$$

$$41) \int x \ln(x) dx = \frac{x^2}{2} \ln(x) - \frac{x^2}{4} + C$$

$$42) \int x \sin(x) dx = -x \cos(x) + \sin(x) + C$$

$$43) \int x^4 \sin(x) dx = -x^4 \cos(x) + 4x^3 \sin(x) + 12x^2 \cos(x) - 24x \sin(x) - 24 \cos(x) + C$$

$$44) \int x e^x dx = x e^x - e^x + C$$

$$45) \int \frac{\ln(x)}{x} \cos(\ln(x)) dx = \ln(x) \sin(\ln(x)) + \cos(\ln(x)) + C$$

$$46) \int e^x \sin(x) dx = \frac{e^x(\sin(x) - \cos(x))}{2} + C$$

$$47) \int x^3 \ln(x^4) dx = \frac{1}{4} x^4 \ln(x^4) - \frac{1}{4} x^4 + C$$

$$48) \int \frac{x \arcsin(x)}{\sqrt{1-x^2}} dx = x - \sqrt{1-x^2} \arcsin(x) + C$$

$$49) \int e^x \cos(3x) dx = \frac{e^x(\cos(3x) + 3\sin(3x))}{10} + C$$

$$50) \int \sin(\ln(x)) dx = \frac{x \sin(\ln(x)) - x \cos(\ln(x))}{2} + C$$

$$51) \int \frac{x-1}{x^2-1} dx = \ln|x+1| + C$$

$$52) \int \frac{x-2}{x^2-1} dx = \frac{3}{2} \ln|x+1| - \frac{1}{2} \ln|x-1| + C$$

$$53) \int \frac{x-5}{x^2-3x+2} dx = 4 \ln|x-1| - 3 \ln|x-2| + C$$

$$54) \int \frac{x^2+5x-2}{x^3-3x^2+2x} dx = -\ln|x| - 4 \ln|x-1| + 6 \ln|x-2| + C$$

$$55) \int \frac{x^2+5x+1}{x^2+1} dx = \frac{5 \ln(x^2+1)}{2} + x + C$$

$$56) \int \frac{1+e^x}{1-e^x} dx = x - 2 \ln|1-e^x| + C$$

$$57) \int \frac{3x-1}{x^2-4x+4} dx = 3 \ln|x-2| - \frac{5}{x-2} + C$$

$$58) \int \frac{-x^3+5x^2-9x+7}{x^3-6x^2+12x-8} dx = -x - \ln|x-2| + \frac{1}{x-2} - \frac{1}{2(x-2)^2} + C$$

$$59) \int \frac{3x-1}{x(x-1)^2} dx = -\ln|x| - \frac{2}{x-1} + \ln|x-1| + C$$

$$60) \int \frac{1}{x^3(x+1)} dx = -\ln|x+1| + \ln|x| + \frac{1}{x} - \frac{1}{2x^2} + C$$

$$61) \int \frac{x-34}{x^2+1} dx = \frac{\ln(x^2+1)}{2} - 34 \arctan(x) + C$$

$$62) \int \frac{5x^2+2x+1}{x^2+1} dx = \ln(x^2+1) - 4 \arctan(x) + 5x + C$$

$$63) \int \frac{-2x+4}{x^2+4x+8} dx = 4 \arctan\left(\frac{x+2}{2}\right) - \ln(x^2+4x+8) + C$$

$$64) \int \frac{x-3}{x^2+2x+1} dx = \ln|x+1| + \frac{4}{x+1} + C$$

$$65) \int \frac{x^2+2x+1}{x-3} dx = \frac{x^2}{2} + 5x + 16 \ln|x-3| + C$$

$$66) \int \frac{x^2+x+6}{x(x^2+2)} dx = 3 \ln|x| - \ln(x^2+2) + \frac{\arctan\left(\frac{x}{\sqrt{2}}\right)}{\sqrt{2}} + C$$

$$67) \int \sin^2(x) \cos^3(x) dx = \frac{\sin^3(x)}{3} - \frac{\sin^5(x)}{5} + C$$

$$68) \int \sin^7(x) dx = \frac{\cos^7(x)}{7} - \frac{3\cos^5(x)}{5} + \cos^3(x) - \cos(x) + C$$

$$69) \int \frac{1}{\cos^4(x)} dx = \frac{\tan^3(x)}{3} + \tan(x) + C$$

$$70) \int \sqrt{9-4x^2} dx = \frac{x\sqrt{9-4x^2}}{2} + \frac{9\arcsin\left(\frac{2x}{3}\right)}{4} + C$$

$$71) \int \frac{x^3}{\sqrt{1-x^2}} dx = \frac{\sqrt{(1-x^2)^3}}{3} - \sqrt{1-x^2} + C$$

$$72) \quad \int \frac{1}{\sqrt[3]{x}-1} dx = 6(\sqrt[3]{x}-1) + \frac{3(\sqrt[3]{x}-1)^2}{2} + 3 \ln|\sqrt[3]{x}-1| + C$$

$$73) \quad \int \frac{1}{\sqrt{16-25x^2}} dx = \frac{\arcsin\left(\frac{5x}{4}\right)}{5} + C$$

$$74) \quad \int \frac{\sqrt{1-x^2}}{x} dx = \sqrt{1-x^2} + \frac{1}{2} \ln|\sqrt{1-x^2}-1| - \frac{1}{2} \ln|\sqrt{1-x^2}+1| + C$$

$$75) \quad \int \frac{\sqrt{1-x^2}}{x^2} dx = -\arcsin(x) - \frac{\sqrt{1-x^2}}{x} + C$$

$$76) \quad \int \frac{1}{\cos(x) \sin(x)} dx = \ln |\tan(x)| + C$$

$$77) \quad \int \frac{\cos(x)}{\sin^{30}(x)} dx = -\frac{1}{29 \sin^{29}(x)} + C$$

$$78) \quad \int \frac{1}{x^2 \sqrt{4-x^2}} dx = -\frac{\sqrt{4-x^2}}{4x} + C$$

$$79) \quad \int e^{\ln\left(\frac{1}{\ln(x)}\right)} \ln(x) dx = x + C$$

$$80) \quad \int x^{\frac{x}{\ln(x)}} dx = e^x + C$$

$$81) \quad \int e^{\sin(x^2)} \cos(x^2) 2x dx = e^{\sin(x^2)} + C$$

$$82) \quad \int \frac{\cos(2x)}{\cos(x)} dx = 2 \sin(x) + \frac{1}{2} \ln|\sin(x)-1| - \frac{1}{2} \ln|\sin(x)+1| + C$$

$$83) \quad \int \frac{\cos(2x)}{\sin(x)+\cos(x)} dx = \sin(x) + \cos(x) + C$$

$$84) \quad \int \left(\frac{1}{x} + x\right)^2 dx = \frac{x^3}{3} + 2x - \frac{1}{x} + C$$

$$85) \quad \int \frac{-\sin(x)}{\cos^2(x)-2\cos(x)-3} dx = \frac{\ln|\cos(x)-3|}{4} - \frac{\ln|\cos(x)+1|}{4} + C$$

$$86) \int \frac{x}{x^3+4x^2+7x+6} dx = \frac{\ln(x^2+2x+3)}{3} - \frac{2 \ln|x+2|}{3} + \frac{\arctan\left(\frac{x+1}{\sqrt{2}}\right)}{3\sqrt{2}} + C$$

$$87) \int x^3 e^{x^2} dx = \frac{(x^2-1)e^{x^2}}{2} + C$$

$$88) \int 3^{\ln(x)} dx = \frac{x^{\ln(3)+1}}{\ln(3)+1} + C$$

$$89) \int \left(\frac{\cos(x)}{x} - \ln(x) \sin(x) \right) dx = \cos(x) \ln(x) + C$$

$$90) \int \left(e^x \ln(x) + \frac{e^x}{x} \right) dx = e^x \ln(x) + C$$

$$91) \int x^x (\ln(x) + 1) dx = x^x + C$$

$$92) \int \frac{6x-5(x-1)}{(x+5)(x-1)} dx = \ln|x-1| + C$$

$$93) \int \frac{x-1}{\sqrt{x}-1} dx = \frac{2\sqrt{x^3}}{3} + x + C$$

$$94) \int \frac{1}{\sqrt[100]{x}} dx = \frac{100 \sqrt[100]{x^{99}}}{99} + C$$

$$95) \int \sqrt{1-e^x} dx = 2\sqrt{1-e^x} + \ln|\sqrt{1-e^x}-1| - \ln|\sqrt{1-e^x}+1| + C$$

$$96) \int \frac{e^{\left(\frac{1}{x}+1\right)}}{x^2} dx = -e^{\frac{1}{x}+1} + C$$

$$97) \int e^x \pi^x dx = \frac{e^{(\ln(\pi)+1)x}}{\ln(\pi)+1} + C$$

$$98) \int \frac{\cos(x) + \frac{1}{x \cos^2(\ln(2x))}}{\sin(x) + \tan(\ln(2x))} dx = \ln |\tan(\ln(2x)) + \sin(x)| + C$$

$$99) \quad \int \sqrt{1+x^2} \, dx = \frac{1}{4} \left(-\ln \left| \frac{x}{\sqrt{1+x^2}} - 1 \right| - \frac{1}{\frac{x}{\sqrt{1+x^2}} - 1} + \ln \left| \frac{x}{\sqrt{1+x^2}} + 1 \right| - \frac{1}{\frac{x}{\sqrt{1+x^2}} + 1} \right) + C$$

$$100) \quad \int \ln^{100}(x) \, dx = \sum_{n=0}^{100} \left(x (\ln x)^{100-n} (-1)^n \frac{100!}{(100-n)!} \right) + C$$