COMMON INDEFINITE INTEGRALS

Function	Indefinite integral	Function	Indefinite integral
f(x)=1	$\int dx = x + C$	f(x)=csc(x)cot(x)	$\int \csc(x)\cot(x)\,dx = -\csc(x) + C$
f(x)=x^r, r≠-1	$\int x^r dx = \frac{x^{r+1}}{r+1} + C$	f(x)=e^x	$\int e^x dx = e^x + C$
f(x)=cos(x)	$\int \cos(x)dx = \sin(x) + C$	f(x)=a^x, a>0, a≠1	$\int a^x dx = \frac{a^x}{\ln(a)} + C$
f(x)=sin(x)	$\int \sin(x)\,dx = -\cos(x) + C$	f(x)=$\frac{1}{x}$	$\int \frac{1}{x} dx = \ln(\lvert x\rvert) + C$
f(x)=$\sec^2(x)$	$\int \sec^2(x)\,dx = \tan(x) + C$	f(x)=$\frac{1}{x^2+1}$	$\int \frac{1}{x^2+1} dx = \arctan(x) + C = \tan^{-1}(x) + C$
f(x)=$\csc^2(x)$	$\int \csc^2(x)\,dx = -\cot(x) + C$	f(x)=$\frac{1}{\sqrt{1-x^2}}$	$\int \frac{1}{\sqrt{1-x^2}} dx = \arcsin(x) + C = \sin^{-1}(x) + C$
f(x)=sec(x)tan(x)	$\int \sec(x)\tan(x)\,dx = \sec(x) + C$	f(x)=$\frac{1}{x\sqrt{x^2-1}}$	$\int \frac{1}{x\sqrt{x^2-1}} dx = \operatorname{arcsec}(\lvert x\rvert) + C = \sec^{-1}(\lvert x\rvert) + C$

Integration by parts formula: $\int udv = uv - \int vdu$