Integrali risolvibili tramite integrazione per parti

$f(x)g'(x)$	$f(x)$	$I=\int f(x)g'(x)\mathrm{dx}$
$e^{3x}\cos x$	e^{3x}	$I=e^{3x}\sin x-3\int e^{3x}\sin x\,\mathrm{dx}=$ $=e^{3x}\sin x-3\left[-e^{3x}\cos x+3\int e^{3x}\cos x\,\mathrm{dx}\right]\Rightarrow$ $I=\frac{1}{10}e^{3x}\left(\sin x+3\cos x\right)+C$
x^2e^{3x}	x^2	$I=\frac{1}{3}x^2e^{3x}-\frac{2}{3}\int xe^{3x}\,\mathrm{dx}=\frac{1}{27}e^{3x}\left(9x^2-6x+2\right)+C$
$\cos^2 x$	$\cos x$	$I=\frac{1}{2}\left(x+\sin x\cos x\right)+C$
$e^{2x}\sin x$	e^{2x}	$I=\frac{1}{5}e^{2x}\left(2\sin x-\cos x\right)+C$
$\ln^2 x$	$\ln^2 x$	$I=x\ln^2 x-2\int \ln x\,\mathrm{dx}=\ln^2 x-2x\left(\ln x-1\right)+C$

Integrazione di funzioni razionali fratte

$f(x)$	$I=\int f(x)\mathrm{dx}$
$\frac{x^3+8}{x-2}=x^2+2x+4+\frac{16}{x-2}$	$\frac{x^3}{3}+x^2+4x+16\ln\lvert x-2\rvert+C$
$\frac{x^2-2}{2x-1}=\frac{x}{2}-\frac{1}{4}-\frac{7}{4}\frac{1}{2x+1}$	$\frac{x^2}{4}-\frac{x}{4}-\frac{7}{8}\ln\lvert 2x+1\rvert+C$
$\frac{x+1}{x^2-5x+6}=\frac{-3}{x-2}+\frac{4}{x-3}$	$-3\ln\lvert x-2\rvert+4\ln\lvert x-3\rvert+C$
$\frac{x^2+1}{x^3-x^2-x+1}=\frac{1}{2}\frac{1}{x+1}+\frac{1}{2}\frac{1}{x-1}+\frac{1}{\left(x-1\right)^2}$	$\frac{1}{2}\ln\lvert x+1\rvert+\frac{1}{2}\ln\lvert x-1\rvert-\frac{1}{x-1}+C$
$\frac{\left(x+2\right)^2}{x^3-1}=\frac{3}{x-1}-\frac{2x+1}{x^2+x+1}$	$3\ln\lvert x-1\rvert-\ln\lvert x^2+x+1\rvert+C$
$\frac{x^3+2x^2+1}{x^5-x^4+2x^3-2x^2+x-1}=\frac{1}{x-1}-\frac{x}{x^2+1}+\frac{x}{\left(x^2+1\right)^2}$	$\ln\lvert x-1\rvert-\frac{1}{2}\ln\left(x^2+1\right)-\frac{1}{2}\frac{1}{x^2+1}+C$
$\frac{x+1}{x^2-3x+2}=\frac{-2}{x-1}+\frac{3}{x-2}$	$-2\ln\lvert x-1\rvert+3\ln\lvert x-2\rvert+C$
$\frac{x^2}{\left(x+2\right)\left(x-1\right)^2}=\frac{4}{9\left(x+2\right)}+\frac{5}{9\left(x-1\right)}+\frac{1}{3\left(x-1\right)^2}$	$\frac{4}{9}\ln\lvert x+2\rvert+\frac{5}{9}\ln\lvert x-1\rvert-\frac{1}{3\left(x-1\right)}+C$
$\frac{x^2+2}{\left(x-1\right)^3}=\frac{1}{x-1}+\frac{2}{\left(x-1\right)^2}+\frac{3}{\left(x-1\right)^3}$	$\ln\lvert x-1\rvert-\frac{2}{x-1}-\frac{3}{2\left(x-1\right)^2}+C$

$\frac{x^2-1}{(x-2)(1+x^2)}=\frac{3}{5(x-2)}+\frac{2}{5}\frac{x}{1+x^2}+\frac{4}{5}\frac{1}{1+x^2}$	$\frac{3}{5}\ln\lvert x-2\rvert+\frac{1}{5}\ln(1+x^2)+\frac{4}{5}\arctan x+C$
$\frac{x^2-2x}{(2x-1)(x^2+1)}=-\frac{3}{5(2x-1)}+\frac{4x-3}{5(x^2+1)}$	$\frac{3}{10}\ln\lvert 2x-1\rvert+\frac{2}{5}\ln(x^2+1)-\frac{3}{5}\arctan x+C$
$\frac{x^2}{x+1}=x-1+\frac{1}{x+1}$	$\frac{x^2}{2}-x+\ln\lvert x+1\rvert+C$
$\frac{1}{x^2+x+1}=\frac{1}{x^2+x+\frac{1}{4}+\frac{3}{4}}=\frac{1}{\left(x+\frac{1}{2}\right)^2+\frac{3}{4}}=$ $=\frac{4}{3}\frac{1}{\left(\frac{2x+1}{\sqrt{3}}\right)^2+1}=\frac{2}{\sqrt{3}}\frac{2/\sqrt{3}}{\left(\frac{2x+1}{\sqrt{3}}\right)^2+1}$	$\frac{2}{\sqrt{3}}\arctan\frac{2x+1}{\sqrt{3}}+C$