Exempel 0.0.1

$$\frac{2x}{(x-1)(x^2+1)} = \frac{A}{x-1} + \frac{Bx+C}{x^2+1}$$

Alltså $2x = A(x^2+1) + (Bx+C)(x-1)$

- $x = 1 \implies 2 = 2A + 0,\ A = 1$
- x^2 termerna $\implies 0 = A + B,\ B = -A = -1$
- konstanta termerna $\implies 0 = A - C \implies C = A = 1$

Så integralen av:

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

...blir:

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