Integral Indefinida - Cambio de variable

Bit Planet

Solución

$$\int \frac{x-1}{x^2-2x+5}\,dx$$

$u = x^2-2x+5$

$du = 2x^1 - 2x^0 + 0$

$du = 2x - 2\,dx$

$dx = \dfrac{du}{2x-2}$

$$\int \frac{x-1}{u}\,\frac{du}{2x-2} = \int \frac{x-1\,(du)}{u(2x-2)}$$

$$= \int \frac{x-1\,(du)}{2u(x-1)} = \int \frac{1\,du}{2u}$$

$$= \frac{1}{2}\int \frac{1}{u}\,du$$

$$= \frac{1}{2}(\ln|u|) + C$$

$$= \frac{1}{2}\ln|x^2-2x+5| + C$$

* $\dfrac{d}{dx}\,x^n = nx^{n-1}$
* $\dfrac{d}{dx}\,c = 0$

* $\int \frac{1}{x}\,dx = \ln|x|$
* $u = x^2-2x+5$