

Answer on Question #37395-Math-Calculus

Calculate $\int \frac{dx}{x^2 - 4x + 5}$

Solution

$$I = \int \frac{dx}{x^2 - 4x + 5} = \int \frac{dx}{(x - 2)^2 + 1}$$

Let $u = x - 2, du = dx$

$$I = \int \frac{du}{u^2 + 1} = \arctan(u) + C$$

Substitute $u = x - 2$:

$$I = \arctan(x - 2) + C$$

Answer

$$\arctan(x - 2) + C$$