

Una Integral Logarítmica

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Resumen . Esta nota presenta una integral con la función Logaritmo.

1. Integral

$$\frac{\pi}{\sqrt{2}} - 1 = \int_0^1 \ln \left(1 + \sqrt{1-x^2} + \sqrt[4]{1-x^2} (\sqrt{1+x} + \sqrt{1-x}) \right) dx \quad (1)$$

2. Integrales Relacionadas

$$\frac{\pi}{\sqrt{2}} = \int_1^{\infty} \frac{1}{x^2} \ln \left(x + \sqrt{x^2-1} + \sqrt[4]{x^2-1} (\sqrt{x+1} + \sqrt{x-1}) \right) dx \quad (2)$$

$$\frac{\pi}{\sqrt{2}} - 1 = \int_0^1 \frac{x}{\sqrt{1-x^2}} \ln \left(1 + x + \sqrt{x} (\sqrt{1+\sqrt{1-x^2}} + \sqrt{1-\sqrt{1-x^2}}) \right) dx \quad (3)$$

$$\frac{\pi}{2\sqrt{2}} - \frac{1}{2} = \int_0^1 \frac{x^3}{\sqrt{1-x^4}} \ln \left(1 + x^2 + x (\sqrt{1+\sqrt{1-x^4}} + \sqrt{1-\sqrt{1-x^4}}) \right) dx \quad (4)$$

Referencias

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