WolframAlpha computational knowledge engine

e^x+1
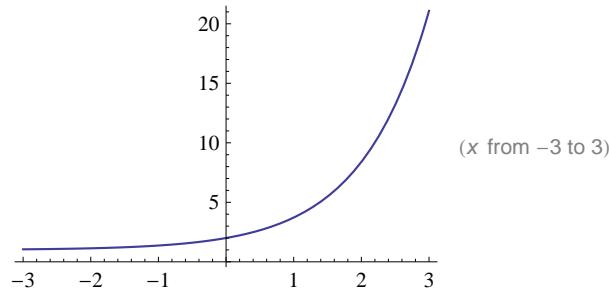
Input:

$$e^x + 1$$

Plots:

(x from -3 to 3)

Root:

$$x = i\left(2\pi n + \pi\right), \quad n \in \mathbb{Z}$$

Series expansion at :x == 0:

$$2 + x + \frac{x^2}{2} + \frac{x^3}{6} + \frac{x^4}{24} + \frac{x^5}{120} + \frac{x^6}{720} + O\!\left(x^7\right)$$

Derivative:

$$\frac{d}{dx}\left(e^x + 1\right) = e^x$$

Generated by Wolfram|Alpha (www.wolframalpha.com) on November 2, 2009 from Champaign, IL.

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Indefinite integral:

$$\int (e^x + 1)\, dx = x + e^x + \text{constant}$$

Limit:

$$\lim_{x \to -\infty} (1 + e^x) = 1$$

Alternative representations:

$$e^x + 1 = z^x + 1 \quad \text{for } z = e$$

Series representations:

$$e^x + 1 = 1 + \sum_{k=0}^{\infty} \frac{x^k}{k!}$$

Integral representation:

$$e^x + 1 = 1 - \frac{i}{2\pi} \int_{-i\infty+\gamma}^{i\infty+\gamma} (-x)^{-s}\, \Gamma(s)\, ds \quad \text{for } (\gamma > 0 \text{ and } 2\,|\arg(-x)| < \pi)$$

Elementary root:

$$x = i\pi \approx 0. + 3.14159\, i \ldots$$