

Good Engineering Procedure

Every new engineer must learn very early that it is never good to make things too easy (good engineering reputation is the key word !)

For example solve the following equation:

$$\ln[\mathit{Lim}_{z \rightarrow \infty} (1 + \frac{1}{z})^z] + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{\cosh y \sqrt{1 - \tanh^2 y}}{2^n}$$

Anyone with some basic mathematics is aware, that

1. Grenzwert $[\mathit{Lim}_{z \rightarrow \infty} (1 + \frac{1}{z})^z] = e$
2. Natural logarithms $\ln e = 1$
3. Pythagoras $(\sin^2 x + \cos^2 x) = 1$
4. Hyperbolic functions $1 = \cosh y \sqrt{1 - \tanh^2 y}$
5. Infinite series $2 = \sum_{n=0}^{\infty} \frac{1}{2^n}$

and therefore the above mentioned equation will be reduced down to

$$1 + 1 = 2$$

which is off course sometimes easier to understand.

But never as efficient (see remark in respect to reputation) in todays computer based algorithms systems with nearly unlimited processing power and storage memory.