

Engineering procedure

Engineering procedure **From an unknown but astute source** :

“Every good engineer must learn early that it is never good taste to designate the sum of two quantities in the form:

$$1 + 1 = 2 \quad (1)$$

“Anyone who has made a study of advanced mathematics is aware that:

$$1 = \ln e$$

and that:

$$1 = \sin^2 x + \cos^2 x$$

further:

$$2 = \sum_{n=0}^{\infty} \frac{1}{2^n}$$

“Therefore, Eq. (1) can be expressed more scientifically as:

$$\ln e + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{1}{2^n} \quad (2)$$

“This may be further simplified by use of the relations:

$$1 = \cosh y \sqrt{1 - \tanh^2 y}$$

and

$$e = \lim_{z \rightarrow \infty} \left(1 + \frac{1}{z}\right)^z$$

“Equation (2) may therefore be rewritten:

$$\ln \left[\lim_{z \rightarrow \infty} \left(1 + \frac{1}{z}\right)^z \right] + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{\cosh y \sqrt{1 - \tanh^2 y}}{2^n} \quad (3)$$

“At this point, it should be obvious that Eq. (3) is much clearer and more easily understood than Eq. (1). Other methods of a similar nature could be used to clarify Eq. (1) but these are easily discovered once the reader grasps the underlying principles.