

Engineering Procedure

Engineering Procedure from an unknown but astute source:

“Every new 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:

$$1 = \ln e \quad (2)$$

And that:

$$1 = \sin^2 x + \cos^2 x \quad (3)$$

Further:

$$2 = \sum_{n=0}^{\infty} \frac{1}{2^n} \quad (4)$$

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

$$\ln e + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{1}{2^n} \quad (5)$$

This may be further simplified by use of the relations:

$$1 = \cosh y \sqrt{1 - \tanh^2 y} \quad (6)$$

and

$$e = \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n \quad (7)$$

“Equation (5) may be therefore rewritten:

$$\ln \left(\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n \right) + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{\cosh y \sqrt{1 - \tanh^2 y}}{2^n} \quad (8)$$

“At this point, it should be obvious that Eq. (8) is much clearer and more easily understood than EQ. (1). Other methods of similar nature could be used to clarify Eq. (1), but these are easily discovered once the reader grasps the underlying principles.”