

PROOF OF FORMULA 3.463

$$\int_0^{\infty} (e^{-x^2} - e^{-x}) \frac{dx}{x} = \frac{\gamma}{2}$$

Formula 3.476.2 states that

$$\int_0^{\infty} [\exp(-x^p) - \exp(-x^q)] \frac{dx}{x} = \frac{p-q}{pq} \gamma.$$

Now put $p = 2$ and $q = 1$ to obtain the current integral.