

**PROOF OF FORMULA 3.351.7**

$$\int_0^a x e^{-\mu x} dx = \frac{1}{\mu^2} - \frac{e^{-a\mu}}{\mu^2} (1 + \mu a)$$

Formula 3.351.1 states that

$$\int_0^a x^n e^{-\mu x} dx = \frac{n!}{\mu^{n+1}} - e^{-a\mu} \sum_{k=0}^n \frac{n!}{k!} \frac{a^k}{\mu^{n-k+1}}.$$

The result follows by taking  $n = 1$ .