PROOF OF FORMULA 3.362.1

$$\int_1^\infty \frac{e^{-\mu x}}{\sqrt{x-1}}\,dx = \sqrt{\frac{\pi}{\mu}}e^{-\mu}$$

Let $t = \sqrt{x-1}$ to obtain

$$\int_1^\infty \frac{e^{-\mu x}}{\sqrt{x-1}}\,dx = 2e^{-\mu}\int_0^\infty e^{-\mu t^2}\,dt.$$

The change of variables $s = \sqrt{\mu}t$ gives the result.