

**PROOF OF FORMULA 4.241.7**

$$\int_0^1 \frac{\ln x \, dx}{\sqrt{1-x^2}} = -\frac{\pi}{2} \ln 2$$

Let  $x = \sin t$  to obtain

$$\int_0^1 \frac{\ln x \, dx}{\sqrt{1-x^2}} = \int_0^{\pi/2} \ln(\sin t) \, dt.$$

This integral is evaluated as  $-\frac{\pi}{2} \ln 2$  in **4.224.3**.