PROOF OF FORMULA 4.521.1

$$\int_0^1 \frac{\operatorname{Arcsin} x}{x}\,dx = \frac{\pi}{2}\ln 2$$

Let $t = \operatorname{Arcsin} x$. Then

$$\int_0^1 \frac{\operatorname{Arcsin} x}{x}\,dx = \int_0^{\pi/2} t\,\cot t\,dt.$$

This last integral has the value $\frac{\pi}{2}\ln 2$ as shown in formula 3.747.7.