$$p(y) = u(a, b)$$

$$E_{p(y)}(sin(y)) \quad, \quad a = 0, \quad b = 1.$$

$$\int_a^b p(y) \, Sin(y) \, dy$$

$$= \int_0^1 \frac{1}{1-0} \, Sin(y) \, dy$$

$$= \left[-Cos(y) \right]_0^1 = -Cos(1) + Cos(0)$$

$$= \underline{0.4597}$$