Solution (#1474) Note that the numerator is the derivative of the denominator and so

$$\int_0^{\pi/2} \frac{2x - \sin x}{x^2 + \cos x} \, \mathrm{d}x = \left[\ln \left| x^2 + \cos x \right| \right]_0^{\pi/2} = \ln \left(\frac{\pi^2}{4} \right).$$