MAT 01901 Opgave E15

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Vi skal finde integralet

$$\int_0^{\frac{\pi}{2}} \frac{\cos x}{1 + \sin^2 x} \, dx$$

Ved substitutionen $t = \sin x$ fås $dt = \cos x \, dx$, så

$$\int_0^{\frac{\pi}{2}} \frac{\cos x}{1 + \sin^2 x} \, dx = \int_0^1 \frac{dt}{1 + t^2} = [\arctan t]_0^1 = \frac{\pi}{4}$$