

A simple article

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$$\int \frac{x \sin x}{1+\cos^2 x} dx = 2i \sum_{R_1=\rho} \frac{1}{4} \frac{R_1}{3+R_1^2} \left(\ln R_1 \ln \frac{e^{ix}-R_1}{R_1} - \text{dilog} \left(\frac{1}{R_1} e^{ix} \right) \right)$$

where ρ is a root of $6Z^2 + Z^4 + 1$

$$6Z^2 + Z^4 + 1, \text{ roots: } \begin{cases} i + i\sqrt{2} \\ i - i\sqrt{2} \\ -i + i\sqrt{2} \\ -i - i\sqrt{2} \end{cases}$$

$$\int_0^1 \frac{x \sin x}{1+\cos^2 x} dx = \int_0^1 x \frac{\sin x}{1+\cos^2 x} dx = .19851$$