

Q1. Evaluate  $\int_0^1 \frac{dx}{(1+\sqrt{x})^3}$

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Q2. Find  $\int_{\pi/2}^{\pi} f(\sin x) \cdot \cos x \, dx$ , if  $f$  is an even integrable function and  $\int_{-1}^1 f(x) dx = 4$ .

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Q1. Evaluate  $\int_0^{\pi/2} (\cos x) \cdot \sin[\pi \sin x] dx$

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Q2. If  $f(x) = \int_{-1}^x t^2 \tan^{-1}(t) dt$ , evaluate  $f(1)$ , and  $f'(1)$ .

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