

$$I = \lim_{\epsilon \rightarrow 0} \left\{ \int_0^1 \frac{dx}{x} x^{-\epsilon} [f(x) - f(0)] + f(0) \int_0^1 \frac{dx}{x} x^{-\epsilon} + \frac{1}{\epsilon} f(0) \right\}$$