Probability, Limit Theorems

Problem set 1. Sept 19, 2002

Q1. If μ is a probability distribution on R such that $\int |x|^{\alpha} d\mu(x) < \infty$ for some $0 < \alpha < 1$, show that the characteristic function is Hölder continuous of exponent α .

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Q2. Is there some sort of a converse?