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Hardy-Littlewood maximal theorem

Canonical name	HardyLittlewoodMaximalTheorem
Date of creation	2013-03-22 13:27:33
Last modified on	2013-03-22 13:27:33
Owner	Koro (127)
Last modified by	Koro (127)
Numerical id	4
Author	Koro (127)
Entry type	Theorem
Classification	msc 28A15
Classification	msc 28A25
Related topic	HardyLittlewoodMaximalOperator
Defines	Hardy-Littlewood theorem

There is a constant $K > 0$ such that for each Lebesgue integrable function $f \in L^1(\mathbb{R}^n)$, and each $t > 0$,

$$m(\{x : Mf(x) > t\}) \leq \frac{K}{t} \|f\|_1 = \frac{K}{t} \int_{\mathbb{R}^n} |f(x)| dx,$$

where Mf is the Hardy-Littlewood maximal function of f .

Remark. The theorem holds for the constant $K = 3^n$.