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General monotone functions and their Fourier coefficients.

We first establish results on general monotone functions, as defined by Liflyand and Tikhonov. These results are used to establish norm equivalences between such functions defined on $(0, \pi)$ and the sequences of their Fourier coefficients. The norms involved are both weighted $L^q_{\omega(p,q)}$ and $l^q_{\omega(p,q)}$ norms and Lorentz space $L(p, q)$ and $l(p, q)$ norms, where $1 < p < \infty$, $1 \leq q < \infty$. This is an further generalization of results originally obtained by Hardy, and later extended by Askey and Boas, Sagher, and Liflyand and Tikhonov. (Received July 20, 2017)