Electronic Journal: Southwest Journal of Pure and Applied Mathematics
Internet: http://rattler.cameron.edu/swjpam.html
ISBN 1083-0464
Issue 1 July 2002, pp. 81 – 110
Submitted: November 25, 2001. Published: July 1, 2002

A PROBABILISTIC DESCRIPTION OF THE THREE THEOREMS OF HARDY

Rohitha Goonatilake

Abstract. The purpose of this paper will be to transpose three of Hardy's theorems to the context of unimodality, large deviation theory, and local limits theorems. In his own work, these three theorems were strategic and were used to prove among other things, certain Tauberian theorems for the Euler-Borel class. But where Hardy's results are for particular sums. Our generalizations apply to various general methods of summability; including for example, random-walk methods, and the convolution method.

1991 A.M.S. (MOS) Subject Classification Codes. 30, 40, 60, 62

Keywords and Phrases:. Hardy's Theorems, Summability, Random-walk methods, Convolution Summability Method, Large Deviation, Local Limit Theorems, Central Limit Theorem

This paper stems from the author's Ph. D. dissertation at Kent State University
Department of Natural Sciences, Division of Mathematics,Texas A&M Int'l University
E-mail: harag@tamiu.edu

Typeset by $\mathcal{A}\mathcal{M}\mathcal{S}$-TEX