

PROBLEMS ON FUNCTIONS OF BOUNDED BOUNDARY AND RADIAL ROTATIONS

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(Received: August 29, 2003; Submitted by R.C. Srivastava)

Abstract: Coefficient problems related to the functions of bounded boundary and radial rotations in the unit disc have been obtained.

Keywords and Phrases: Bounded variation, starlike, convex, close-to-convex

1. Introduction

Let $BV[0, 2\pi]$ be the class of all real valued functions and of bounded variations in $[0, 2\pi]$. We denote V_k , the set of functions,

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n \quad (1.1)$$

which are regular in $D = \{z : |z| < 1\}$ and satisfy

$$f'(z) = \exp \left\{ \frac{1}{\pi} \int_0^{2\pi} \log(1 - ze^{-it})^{-1} du(t) \right\} \quad (1.2)$$

where $u(t) \in BV[0, 2\pi]$ with

$$\int_0^{2\pi} du(t) = 2\pi, \quad \int_0^{2\pi} |du(t)| \leq k\pi \quad (1.3)$$

Similarly, we denote R_k , the class of functions $f(z)$ of the form (1.1) which are regular in D and satisfy

$$f(z) = z \exp \left\{ \frac{1}{\pi} \int_0^{2\pi} \log(1 - ze^{-it})^{-1} du(t) \right\} \quad (1.4)$$

where $u(t) \in BV[0, 2\pi]$ and satisfies (1.3).

Goodman [1] and Umezava [4] have defined multivalently convex, starlike and close-to-convex functions which are regular in D .