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PROPERTIES OF CERTAIN CLASS OF ANALYTIC FUNCTIONS

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Abstract: We define here a simple class of negative coefficient. Properties like closure, linear combination and inclusion relations are investigated.

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1. Introduction and Definitions

Let $\mathcal{A}$ be the class of all analytic functions of the form

$$f(z) = z + \sum_{k=2}^{\infty} a_k z^k \tag{1.1}$$

in the open unit disk $U = \{z : |z| < 1\}$ and normalized by $f(0) = f'(0) - 1 = 0$.

A function $f(z) \in \mathcal{A}$ is said to be starlike of order α if

$$\Re\left\{\frac{zf'(z)}{f(z)}\right\} > \alpha, z \in U.$$

This class is denoted by $S^*(\alpha)$. In a similar vein the class of convex functions of order α is given by

$$\Re\left\{1 + \frac{zf''(z)}{f'(z)}\right\} > \alpha, z \in U.$$