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On Neighborhoods of Analytic Functions having Positive Real Part

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Abstract: Two subclasses $\mathcal{P}\left(\frac{\alpha-m}{n}\right)$ and $\mathcal{P}'\left(\frac{\alpha-m}{n}\right)$ of certain analytic functions having positive real part in the open unit disk \mathbb{U} are introduced. In the present paper, several properties of the subclass $\mathcal{P}\left(\frac{\alpha-m}{n}\right)$ of analytic functions with real part greater than $\frac{\alpha-m}{n}$ are derived. For $p(z) \in \mathcal{P}\left(\frac{\alpha-m}{n}\right)$ and $\delta \geq 0$, the δ -neighborhood $\mathcal{N}_\delta(p(z))$ of $p(z)$ is defined. For $\mathcal{P}\left(\frac{\alpha-m}{n}\right)$, $\mathcal{P}'\left(\frac{\alpha-m}{n}\right)$, and $\mathcal{N}_\delta(p(z))$, we prove that if $p(z) \in \mathcal{P}'\left(\frac{\alpha-m}{n}\right)$, then $\mathcal{N}_{\beta\delta}(p(z)) \subset \mathcal{P}\left(\frac{\alpha-m}{n}\right)$.

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