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Construction of Convex Mappings of p -Balls in \mathbb{C}^2

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Abstract. For $2 \leq p < \infty$, we consider convex biholomorphic mappings F of the p -ball $B_p = \{(z, w) \in \mathbb{C}^2 : |z|^p + |w|^p < 1\}$. In particular, we find conditions under which functions of the form $F(z, w) = (z + aw^k, w)$, where $a \in \mathbb{C}$ and $k \in \mathbb{N}$, and $F(z, w) = (f(z), g(w))$, where f and g are mappings of the unit disk, map B_p onto convex domains in \mathbb{C}^2 .

Keywords. Biholomorphic mapping, convex mapping, p -norm.

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