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## List of Symbols

### Point Sets

$D_R$	disk $ z  < R$ in complex plane $\mathbb{C}$ and real plane $\mathbb{R}^2$	xi
$G$	a set in $\mathbb{C}$ or $\mathbb{R}^2$ with closure $\overline{G}$ and boundary $\partial G$	14
$\mathbb{C}_+$	upper half-plane of the complex plane	16
$\mathbb{R}_+^2$	upper half-plane of the real plane	57
$z$	$x + iy$ in $\mathbb{C}$ , and $(x, y)$ in $\mathbb{R}^2$	57

### Vectors

$\ell_\vartheta$	unit vector at an angle $\vartheta$ with respect to the x-axis	61
$l_\vartheta$	unit vector having an angle $\vartheta$ with the radial direction	63

### Functions

$f$	analytic function in a domain of $\mathbb{C}$	xi
$\Re f$	real part of an analytic function $f$	xii
$\Im f$	imaginary part of an analytic function $f$	xii
$ g $	modulus (absolute value) of a complex (real) valued function $g$	xi
$\mathcal{P}_m$	polynomial of degree $m$	xiv
$\Delta g(z)$	$= g(z) - g(0)$ , increment of a function $g$ at $z = 0$	6
$\arg f(z)$	argument of $f(z)$	13
$\Delta_\xi g(z)$	$= g(z) - g(\xi)$ , increment of a function $g$	14
$B(\alpha, \beta)$	Beta-function	18
$F(\alpha, \beta; \gamma, x)$	hypergeometric Gauss function	31
$u$	harmonic function in a domain of $\mathbb{R}^2$	57
$\nabla u$	gradient of $u$	57
$ \nabla u $	Euclidean length of $\nabla u$	57
$\partial u / \partial l$	derivative of $u$ in the direction of a unit vector $l$	58
$\Gamma(\alpha)$	Gamma-function	75

### Function Spaces

$L_p(\partial D_R)$	space of real valued functions for which $ f ^p$ is integrable on $\partial D_R$	19
$h_p(D_R)$	Hardy space of harmonic functions in the disk $D_R$ which are represented by the Poisson integral with a density in $L_p(\partial D_R)$	6
$C^1(G)$	space of real valued functions whose elements have continuous first derivatives on $G \subset \mathbb{R}^2$	63

**Characteristics of Functions**

$\mathcal{A}_f(R)$	supremum of $\Re f$ on the disk $D_R$	3
$\mathcal{B}_f(R)$	infimum of $\Re f$ on the disk $D_R$	12
$\mathcal{M}_f(R)$	supremum of $ f $ on the disk $D_R$	14
$m_f(R)$	infimum of $ f $ on the disk $D_R$	48
$\mathcal{R}_f(R)$	supremum of $ \Re f $ on the disk $D_R$	82
$\ g\ _p$	norm of a real valued function $g$ in the space $L_p(\partial D_R)$	19
$\mathcal{O}_g(G)$	oscillation of a real valued function $g$ on a set $G$	38
$E_p(g)$	best approximation of a real valued function $g$ by a real constant in the norm of $L_p(\partial D_R)$	38
$E_{m,p}(g)$	best approximation of a real valued function $g$ by the real part of algebraic polynomials of degree at most $m$ in the norm of $L_p(\partial D_R)$	71

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