

GEOMETRIC FUNCTION THEORY GRADUATE COURSE, SPRING 2018

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HOMEWORK ASSIGNMENTS

Problems are taken from J.B. Garnett and D.E. Marshall, “Harmonic measure,” Cambridge University Press, unless otherwise specified.

Problem set 1

Chapter	Problems	Due date
1	1; 2; 5; 8	22 February 2018

Problem set 2

Chapter	Problems	Due date
2	3; 5; 6; 7ab	15 March 2018

Problem set 3

Chapter	Problems	Due date
3	1i-iv; 2; 7a-c	19 April 2018

Problem set 4

Chapter	Problems	Due date
4	1; 5a,b; 6a; problem below	17 May 2018

Problem: Let \mathbb{D} be the unit disc and K a connected set such that the component of 0 of $\mathbb{D} \setminus K$ is simply connected. Suppose $\text{dist}(0, K) = r \in (0, 1)$. Show that there is a universal constant c such that

$$\omega(0, \partial\mathbb{D} \setminus K, \mathbb{D} \setminus K) \leq cr^{1/2}.$$

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