

## homework 14

1. 求调和算子在  $1/4$  扇形  $\Omega = \{(x, y) \in \mathbb{R}^2 \mid x^2 + y^2 < 1, x > 0, y > 0\}$  内的 Green 函数, 并求出下面 Dirichlet 问题解的表达式:

$$\begin{cases} u_{xx} + u_{yy} = 0, & (x, y) \in \Omega \\ u(0, y) = y(1 - y), & (0 \leq y \leq 1) \\ u(x, 0) = x(1 - x)^2, & (0 \leq x \leq 1) \\ u|_{x^2+y^2=1} = 0 \end{cases}$$