

Math 266B Winter 2016: Homework 2. Due 1/22.

1-4. Evans p. 85. Problem 6,8,9,10.

5. Let U be a bounded domain in \mathbb{R}^n with smooth boundary. Show that there exists at most one solution in $C^2(U) \cap C(\bar{U})$ of the Robin boundary problem

$$\begin{cases} -\Delta u = f & \text{in } U; \\ u + \frac{\partial u}{\partial \nu} = g & \text{on } \partial U. \end{cases}$$

where $\nu = \nu_x$ is the outward normal at $x \in \partial U$.

6. Determine the Green's function for the annular region bounded by two concentric spheres in \mathbb{R}^n .