

Math 2900 – Spring 2008
Homework X
Due Apr 18

Problem 1: Problem 8 on page 214

Problem 2: Problem 11 on page 214

Problem 3: Problem 2 on page 222 (Find the solution using reflection argument.)

Problem 4: Let f have a uniformly bounded derivatives of order less than or equal to s . Show that

$$u(x, t) = \int_{\mathbb{R}^n} K(x, y, t) f(y) dy$$

with $K(x, y, t) = (4\pi t)^{-n/2} \exp\left[-|x - y|^2 / (4t)\right]$ is of class C^s for all x and $t \geq 0$.