

Physics 116C
Homework 6
due 11/13/07

Boas Chapter 12: 16.5, 16.9, 17.7, 18.10, 19.2, 22.5, 22.11
and
Chapter 13: 5.2, 7.15

In addition:

1. Consider a damped circular membrane. Its height z is a function of r , θ and time t . It is attached to a rigid support along its circumference at $r = 1$, so that $z(r = 1, \theta, t) = 0$. Find the general form of the solution assuming that it satisfies the equation

$$\nabla^2 z = \frac{1}{v^2} \frac{\partial^2 z}{\partial t^2} + \mu \frac{\partial z}{\partial t}$$

Here v and μ are constants.