

Partial Differential Equations - Practice Quiz 1

Professor:

Dr. Joanna Bieri

joanna_bieri@redlands.edu

1. In your own words, explain the steps you take to solve the Eigenvalue Problem

$$X'' - \lambda X = 0$$

with some given boundary conditions. You are not expected to do any calculations here, just explain in words the steps you would need to take.

2. Solve the PDE, including doing all the integrals at the end. Explain your work.

$$u_t = u_{xx}$$

$$u_x(0, t) = 1$$

$$u(1, t) = 0$$

$$u(x, 0) = x$$