

**Practice problems for section 9.7**

**Problem 1** Find the solution of the following problem.

$$u_{xx} + u_{yy} = 0, \quad 0 < x < 2, \quad 0 < y < 2$$

$$u(x, 0) = u(x, 2) = 0$$

$$u(0, y) = 0, \quad u(2, y) = \sin \frac{\pi y}{2}.$$

**Problem 2** Find the solution of the following problem.

$$u_{xx} + u_{yy} = 0, \quad 0 < x < 2, \quad 0 < y < 2$$

$$u(x, 0) = u(x, 2) = 0$$

$$u(0, y) = 1, \quad u(2, y) = 0.$$