Homework Problems

1) Problems 2, 3 from section 4.1.

2) Problems 1, 4 from section 4.2

Practice Problems on 4.1-4.2

1. Separate the variables in the problem \( u_{tt} = u_{xx} \) and solve it for \( 0 < x < 3 \) with boundary conditions \( u(0, t) = u(3, t) = 0. \)

2. Solve the diffusion equation \( u_t = u_{xx} \) in \( 0 < x < l \) with \( u_x(0, t) = u(l, t) = 0. \)

3. Separate the variables to solve the PDE: \( u_t = u_{xx} + u \) with boundary conditions \( u(0, t) = u(\pi, t) = 0. \)