

4. (8 points) Solve $u_{xx} + u_{yy} = 0$ if $u_x(0, y) = 0$, $u_x(4, y) = 0$, $u(x, 0) = 0$, and $u(x, 2) = \cos(6\pi x)$. Show all steps.

5. (4 points) Use prior work to help solve $u_{xx} + u_{yy} = 0$ if $u_x(0, y) = 0$, $u_x(4, y) = 0$, $u(x, 0) = 0$, and $u(x, 2) = x^2$.