

Exercise 11

Solve the biharmonic wave equation

$$\begin{aligned}u_{tt} + u_{xxxx} &= 0, & -\infty < x < \infty, t > 0, \\u(x, 0) &= f(x), & u_t(x, 0) = 0 \quad \text{for } -\infty < x < \infty.\end{aligned}$$