

**Exercise 10**

Solve  $u_{tt} = 9u_{xx}$  in  $0 < x < \pi/2$ ,  $u(x, 0) = \cos x$ ,  $u_t(x, 0) = 0$ ,  $u_x(0, t) = 0$ ,  $u(\pi/2, t) = 0$ .