

**Exercise 9.7.4**

Solve the same PDE as in Exercise 9.7.3 for a rod of length  $L$ , with position on the rod given by the variable  $x$ , with the two ends of the rod at  $x = 0$  and  $x = L$  kept (at all times  $t$ ) at the respective temperatures  $T = 1$  and  $T = 0$ , and with the rod initially at  $T(x) = 0$ , for  $0 < x \leq L$ .