Exercise 12

Convert each of the following Fredholm integral equation in 9–16 to an equivalent BVP:

$$u(x) = \sinh x + \int_0^1 K(x,t)u(t)\,dt,\ K(x,t) = \begin{cases} 4t(1-x), & \text{for } 0 \le t \le x \\ 4x(1-t), & \text{for } x \le t \le 1 \end{cases}$$