Example. Determine Green’s functions to solve the following two-point boundary-value problems

(a) \( u'' - k^2 u = f(x), \quad 0 < x < L, \quad u(0) = u(L) = 0 \)
(b) \( (xu')' - k^2 xu = f(x), \quad 0 < x < a, \quad u(0) = \text{ok}, \quad u(a) = 0 \)

Here, \( k > 0 \) and \( f(x) \) are considered to be known.