

Exercises

1. Let $s(x)$ be a solution of the equation $-u'' = \delta$ where δ is the Dirac functional. Construct a Green's function for the boundary-value problem $-u''(x) = f(x)$, $0 < x < 1$, with $u(0) = u(1) = 0$ starting with the special solution $s(x - \xi)$ and finding the appropriate $w(x, \xi)$ as on page 8 of the notes.

2. Exercise 2 on page 8 of the notes. (Alternate proof of the weak maximum principle.)