

Homework Problems on the Green Function Method
Fall 2009, Math 246, Professor David Levermore

1. Compute the Green functions associated with the following differential operators L .

a) $L = D^2 + 8D - 20$

b) $L = D^2 + 8D + 20$

c) $L = D^4 + 13D^2 + 36$

2. Use the Green function method to find a general solution of the following equations.

a) $D^2y - Dy - 2y = \frac{1}{e^t + 1}$

b) $D^2y + y = \tan(t)$

c) $D^2y + y = \frac{1}{16 + 9 \cos(t)^2}$