

## Homework 6, due on April 29

Solve the following problems from the textbook of Hildebrand, Section 5:

1. Problem 2
2. Problem 22
3. Problem 23
4. Problem 31
5. Problem 34
6. Problem 49
7. Problem 50
8. Problem 63
9. Solve the equation

$$y'' - \lambda^2 y = \delta(x - a) \quad a > 0$$

with boundary conditions  $y \rightarrow 0$ ,  $y \rightarrow \pm\infty$  by the use of the Complex Fourier transform.

5. Solve the same equation with boundary conditions

$$y(0) = 0 \quad y(\infty) = 0$$

by the use of the Sine Fourier transform.