

Partial Differential Equations

HOMEWORK # 8 (due Th Nov 1)

1 (25 pts). Problem 1 in §4.3 of Strauss.

2 (35 pts). Problem 2 in §5.1 of Strauss. Use MATLAB to plot the first 6 Fourier modes in one picture. In another picture also plot the sum of the first 2, 4 and 6 Fourier modes (the truncated Fourier series $S_2(x)$, $S_4(x)$ and $S_6(x)$), and the function x^2 . Are $S_2(x)$, $S_4(x)$ and $S_6(x)$ getting closer to x^2 ? Explain.

3 (20 pts). Problem 4 in §5.2 of Strauss.

4 (20 pts). Problem 10 of §5.2 of Strauss