

Math 54 Handout 20

August 3, 2018

Question 1.

Compute the Fourier series for

$$f(x) = |x|, \quad -L \leq x \leq L$$

Question 2.

Compute the Fourier cosine series and Fourier sine series for

$$f(x) = L - x, \quad 0 \leq x \leq L$$

Question 3.

Solve the following heat flow problem

$$\begin{cases} \frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2} \\ u(0, t) = u(L, t) = 0 \\ u(x, 0) = 1 \end{cases}$$