Course 2E2 2008-09 (SF Engineers & MSISS & MEMS)

S h e e t 13

Due: at the end of the tutorial

Exercise 1

Find the Fourier series of the function $f(x)$:

(i) $f(x) = \begin{cases} 2 \text{ if } -\pi \le x < 0 \\ -1 \text{ if } 0 \le x \le \pi; \end{cases}$

(ii) $f(x) = \begin{cases} 0 \text{ if } -\pi \le x < 0 \\ \pi + x \text{ if } 0 \le x \le \pi. \end{cases}$

Exercise 2

Find the Fourier Integral Representation of the function $f(x)$:

$$f(x) = \begin{cases} 0 \text{ if } |x| \ge 1 \\ x \text{ if } |x| < 1. \end{cases}$$