

Exercise for the lecture
Wireless Sensor Networks
Summer 2016
Sheet 2

EXERCISE 3:

1. Consider the function

$$f(x) := \begin{cases} 0, & x \in [2k\pi, 2k\pi + \pi], k \in \mathbb{Z} \\ \sin(8x), & x \in [2k\pi + \pi, 2k\pi + 2\pi], k \in \mathbb{Z} \end{cases}$$

and plot it for $x \in [0, 4\pi]$.

2. Compute the Fourier coefficients a_i, b_i of $f(x)$ for $i \leq 8$.
3. Plot the function $a_0 + a_1 \cos x + b_1 \sin x$.
4. Plot the function $a_8 \cos x + b_8 \sin x$.