

# Homework Signal 3

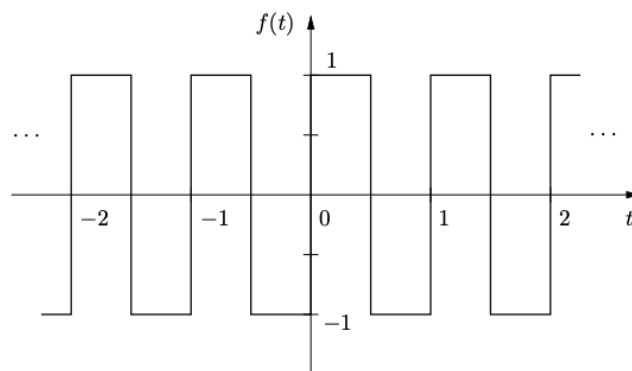
Week 3

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## 1 Fourier Series

**Problem 1.** Find the Fourier series of the following periodic function:



Solution.

**Problem 2.** Find the Fourier Series (FS) of the periodic function  $x(t)$  which are provided as follows.

2.1  $x(t) = \frac{\pi t^3}{2}; -1 < t < 1$

**Solution.**

**TO SUBMIT**

2.2  $x(t) = \pi - t; -\pi \leq t \leq \pi$

**Solution.**

**TO SUBMIT**

2.3  $x(t) = t^2 + \sin^3(\pi t); -1 \leq t \leq 1$

**Solution.**