

Worksheet 10

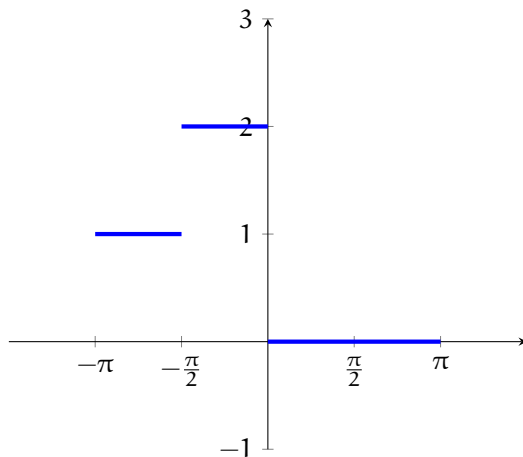
Due: Thursday, October 30

1. Define $s(x)$ to be the square wave and $r(x)$ to be

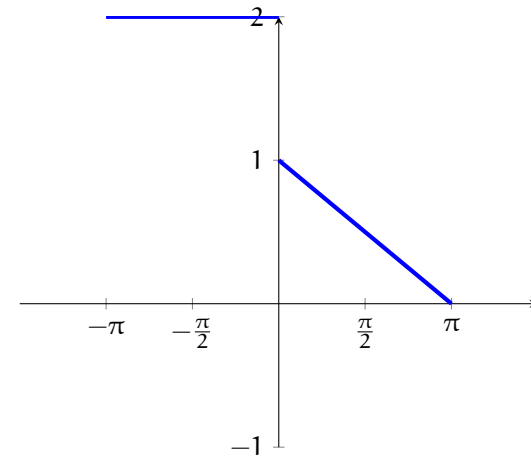
$$r(x) = \begin{cases} 1 & -\pi \leq x < -\pi/2 \\ 0 & -\pi/2 \leq x < \pi. \end{cases}$$

(a) Graph $r(x)$.

(b) If $f(x)$ is given by the graph below, write $f(x)$ in terms of $s(x)$ and $r(x)$:



2. Let $f(x)$ have the following graph:



Suppose $F(x)$ is the Fourier series of f . Evaluate the following.

- (a) $F(0)$
- (b) $F(\pi)$
- (c) $F(7\pi)$
- (d) $F(-4\pi)$