Exercise 1
Identify even or odd functions and find their Fourier series for $-\pi \leq x \leq \pi$:

(i) $f(x) = -x$;
(ii) $f(x) = x^2$.

Exercise 2
Find the Fourier integral representation of the function

\[ f(x) = \begin{cases} 0 & \text{if } |x| > 1 \\ -x & \text{if } |x| < 1. \end{cases} \]