

MATH 464, HW 3

Consider a 1-periodic function f defined on $[-1/2, 1/2)$ by $f(x) = x$, and extended periodically. What is the relationship between this function and its Fourier Series?

[Please note that there is no unique answer to the above question - there are many different ways to approach it. As such, part of the problem is to find a scientifically sound way of expressing this relationship, and arguing for it. Note also that the problem can be approached from either theoretical or numerical perspective.]