

MA 490: Exam 2 practice problems

Reading : Sections 2.5.1, 2.5.2, Chapter 3, 4.1 – 4.5.

Practice problems for the inclass portion

1. 2.5.1c, e.
2. 2.5.5a, c.
3. 3.3.18
4. Prove that the Fourier series of an odd function is a series of only sines.
5. Prove that the Fourier series of an even function is a series of only cosines.
6. Suppose f and $f'(x)$ are piecewise smooth. Prove that the Fourier cosine series of a continuous function $f(x)$ can be differentiated term by term.
7. Prove that if $f'(x)$ is piecewise smooth, then the Fourier sine series of a continuous function $f(x)$ can be differentiated term by term if and only if $f(0) = 0$ and $f(L) = 0$.
8. 3.4.12.
9. 3.5.1, 3.5.6.