

Math 330 Reading Questions

Section 3.2

NAME _____

Read pages 72–78 from Section 3.2 in the textbook and answer the following questions. This sheet will be collected at the beginning of class on Tuesday. Your responses will be graded for completeness.

1. In this text, $\langle f, g \rangle$ denotes a certain *inner product* on functions. What is the definition of $\langle f, g \rangle$?
2. Give an example of an *orthogonality relationship* satisfied by the trigonometric functions.
3. What is the definition of the *Fourier series* of a function $f(x)$ defined on $-\pi \leq x \leq \pi$?
4. Why is the \sim symbol used instead of an equal sign when writing down a Fourier series?
5. What is the Fourier series for the function $f(x) = x$?
6. What is a *periodic extension* of a function?