

Math 330 Reading Questions

Section 3.1

NAME _____

Read Section 3.1 in the textbook and answer the following questions. This sheet will be collected at the beginning of class on Thursday. Your responses will be graded for completeness.

1. At the beginning of Chapter 3, the author claims that Fourier's discovery easily ranks in the "top ten" mathematical advances of all time. What are some reasons for is this?
2. The author presents several versions of the heat equation at the beginning of Section 3.1. What do these equations all have in common?
3. How is the eigenequation (3.19) similar to the eigenequation you learned about in Linear Algebra?
4. In general, a partial differential equation will have how many linearly independent eigensolutions?
5. What are the eigensolutions of the ODE $v'' = \lambda v$?
6. The author states several questions at the end of Section 3.1. Which of these questions are you most curious about?