

Part I: Read and Respond (prepare for class Monday, March 24)

Read Section 3.6 for the big picture (you don't need to spend time figuring out the details), glancing back at Section 3.5 for the definition of *nowhere-dense set* and the statement of the Baire Category Theorem (Theorem 3.5.4) so that you have an idea of what's being talked about there. Then read Section 4.1, taking notes for yourself and answering the following questions to turn in as your Part I assignment. Review the syllabus for parts (a)–(c) that should be included in this assignment.

Reading Questions

1. Compare and contrast the first attempt at a definition of a function given by Euler in *Introductio in analysin infinitorum* (1748): “a function of a variable quantity is an analytic expression composed in any way from this variable quantity and numbers or constant quantities” with our current definition of a function.
2. Of the questions listed at the end of Section 4.1, which are most interesting/intriguing to you? What other questions does the discussion in Section 4.1 inspire for you?

Part II: Exercises (prepare for class for Monday, March 24)

1. Exercise 3.3.2
2. Exercise 3.3.3

Part III: Problems (due Wednesday, March 26 at the beginning of class)

1. Exercise 3.3.4 (I)
2. (optional bonus) Exercise 3.3.8 (P)