Homework 6

Math 302 (section 501), Fall 2016

This homework is due on Thursday, October 6.

0. *(This problem is not to be turned in.)*

   (a) Read Sections 1.4–1.6.

   (b) (Practice Problems) Section 1.4 # 6, 9, 13–15, 20, 22, 32, 36, 37, 47

   (c) (Practice Problems) Section 1.5 # 12, 20, 23, 24, 28, 30, 34, 39

1. Are the following statements logically equivalent? (Explain your answer.)

    (i) When I drive, I don't text.

   (ii) I never drive and text.

2. (a) Use quantifiers to complete the following definition: *for functions f and g, from $\mathbb{R}$ to $\mathbb{R}$, $f(x)$ is said to be $O(g(x))$ if* _____ .

   (b) Negate your answer to (a).

3. Consider the following statement: *Every differentiable function is continuous.*

   (a) Introduce appropriate predicates and a domain, and then translate the statement into a proposition using quantifiers.

   (b) Negate your answer to (a).

4. Section 1.4 # 4, 8, 44

5. Section 1.5 # 4, 20d, 24d, 30d

6. Section 1.6 # 4, 10, 19