Learning to read: 6.1
Math 1101

The ability to learning mathematics or other technical subjects independently through reading is a valuable skill. This worksheet will lead you through learning the details of chapter 6.1 by reading the textbook.

Work in groups of up to three students. Each student should complete each of the following on their own paper. This is due on Monday, January 28 at the beginning of class.

Turn to page 415 of the textbook.

1. Typically, the title and first paragraph will explain in relatively simple terms what the content and goals of the section are. Read the title of the section and the first paragraph.

   In your own words, what is this section about based on the title and first paragraph?

2. The second paragraph sets up the notation for the derivation. **What is S? What is $f(x)$? What is $g(x)$? Are there any special assumptions on the functions $f(x)$ and $g(x)$ and their relationship with each other?**

3. The third paragraph uses the setup from the second paragraph and begins to approximate the area between the curves. **Give a description of what is achieved in this paragraph. Also draw a figure illustrating the ideas.** Your description should use the notation from the previous part along with the new notation introduced in this paragraph (Δx, x_i, x_i^*). Note that you may have to refer to section 5.1 if you are unsure of any of this notation.

4. The two paragraphs following the figure explain how to go from an approximation to the area. **Explain how is this achieved. You should also write down the information in each of the red boxes.**

5. **What is the meaning of the paragraph following the second red box (at the bottom of the page)?**

   Turn to page 416.

6. **Work though the details of Example 1.** If you can solve the problem without reading the solution in the book, do so. If not, use the solution in the book to help you.

   Note: Do you see that little blue box after Example 1? That little blue box indicates the end of the example. This means that the text on the next line is no longer part of the example.

7. The two paragraphs following Example 1 give some advice for how to think about the formulas derived on page 415. **In your own words, using the new notation introduced in these paragraphs, explain the content of these paragraphs.**

8. Example 2 is meanto to put the advice given in the previous two paragraphs to work. **Work through the details of Example 2.** Again, attempt to solve the problem without reading the solution.

   Direct your attention to page 417.

9. The first paragraph on page 417 explains what Example 3 is about. **Explain what you learned from the first paragraph.**

   Let's elect to skip the details of examples 3 and 4 at this point. Turn to page 418 and begin at the paragraph after the end of Example 4.

10. **In your own words, using the new notation introduced, explain the content of the paragraph starting after Example 4. Write down the contents of the red box and be sure to think about what it means.**

11. **Work through the details of Example 5.**

    Turn to page 419.

12. Read from the beginning of page 419 until the beginning of Example 6. **In your own words, using the notation introduced, explain the contents of this portion of the section.**

13. **Work through the details of Example 6.**

    Turn to page 420.

14. **Find a problem similar to Example 1 or 2 that illustrates the use of the second red box on page 415. Solve it.**

15. **Find a problem similar in nature to Example 5 that illustrates the use of the red box on page 418. Solve it.**

16. **Find a problem for which the technique described on page 419 is useful. Solve it.**