

Math 15200/14 Homework 5

Due date: Thursday, November 7, 2019, 5pm (in my mailbox in Eckhart basement)

Please present your solutions clearly and in an organized way. Think of it this way: if you show it to another student in this class, he/she should be able to understand it without needing to ask you questions.

October 31

Goals:

- Practice finding volume with disk/washer and shell methods
- Sketch graphs of inverse functions

Exercises 6.2:

- 9, 17, 55: For these problems, sketch the region in the plane, and draw a thin rectangle that is used in the disk/washer method. See the left figure of Figure 6.2.8 for an example.

Exercises 6.3:

- 1, 9, 17: For these problems, sketch the region in the plane, and draw a thin rectangle that is used in the shell method. See the left figure of Figure 6.3.3 for an example.
- 25–30: Note that these problems ask you to use both the washer and the shell method. You should write down the integral you get from each method, but you only have to evaluate one of the two. (However, to check your work, you can evaluate both. If one of the two seems hard to evaluate, you can ask Wolfram Alpha to do it for you.)

Exercises 7.1:

- 28–31

November 5

Goals:

- Get some practice finding inverses, derivatives of inverses, etc.

Exercises 7.1:

- 1, 3, 7, 19, 27, 35, 38, 39, 41, 45, 51
- (Note: The answer to 38 is $\frac{2\sqrt{3}}{3}$.)

This is all for HW 5.