

## Digest 2

(A compilation of emailed homework questions, answered around Wednesday.)

**Question.** [Exercise 6, Homework 1] True or False: For any real number  $x$ , we have  $\sqrt{x^2} = x$ . Justify your answer.

(From a student): The solutions says this is false since it fails for  $x = -1$ . But I thought that the square roots of 1 were  $\pm 1$ ?

*Answer.* Whenever we use the square root symbol  $\sqrt{x}$ , we always mean the nonnegative root of  $x$ . That is, the function  $f(x) = \sqrt{x}$  is the function that is positive when  $x > 0$ , where  $f(0) = 0$ , and such that  $f$  is undefined when  $x < 0$ .

It is true that the square roots of 1 are 1 and  $-1$ . However, this is different than using the square root function. That is, asking for the square roots of 1 is different than computing  $\sqrt{1}$ .

**Question.** (From a student): Can I use L'Hopital's rule to evaluate certain limits?

*Answer.* We have not covered this topic yet, so, no, you cannot use this yet. Once we cover this topic, you can use it.

**Question.** (From a student): I was wondering if you have a list of extra textbook questions we should do as practice?

*Answer.* I do not have such a list, but for extra practice, I would recommend doing a few of the easier ones, then focusing on the more challenging ones.

**Question.** (From a student): I was wondering if we could get the solutions to homework 2 before Tuesday because that's when our quiz is and that way we can rectify any mistake we're making before giving the quiz.

*Answer.* The homework solutions will be posted at the end of the week as usual. The quiz questions will be very similar to or identical to the homework questions. So, if I gave out the solutions before the quiz, that would be kind of like giving you the answers to a homework, and then having you turn in the homework. That is, it wouldn't really be testing anything meaningful.

However, as usual, you can ask specific questions via email or in office hours.