

Sharing Mathematics presentation: Experiences using open source textbooks in calculus and precalculus

Part 1. Nora Franzova

Langara College adopted the BCCampus recommended textbook for College Algebra - the book is by Stitz and Zeager: <http://www.stitz-zeager.com/>

Printed version of the book can be bought from BCCampus or from <https://www.lulu.com/> (the cheaper and nicer version).

We used it for 6 semesters so far, and after the first two semesters we administered a questionnaire to several sections of students to see what they think about the book. Results of the questionnaire are at the end of this report. One of the best “perks” that came with the book – without BCCampus advertising it, is a free online homework site called <https://www.myopenmath.com/>. Coincidentally the site has problems specifically related to the textbook, and videos that represent most of the topics that the book covers. Students really enjoyed this resource. Students were given a mark of 10% if they got at least 80% on their online homework.

Instructors were a bit more critical about the book. They did not like certain sections, the organization of topics, some exercises, how detailed certain topics were. Some people did not like the style of writing.

We discussed adapting the textbook, but we need to find someone with “lots of extra time” to do the editing.

Math 1152 Text Book Survey Results

A survey was conducted to examine students' reaction to the Math 1152 textbook (College Algebra 3e, Stitz & Zeager), and the accompanying resources available from MyOpenMath.

Four sections of Math 1152 students were surveyed over the 201430 and 201510 semesters. A total of 131 responses were obtained.

I. Summary (“take aways”):

1. **Students did not read the text much.** About 25% never read the text at all, and about 30% read it less than once a week.
2. **Electronic format was fine** with them. Over 80% did not print the text.
3. **The text is quite readable.** Over 45% rated it as easy or very easy to read. However, among the 28 who said they never read the text, 9 rated it as hard or very hard to read.
4. **Exercises are perceived to be helpful.** Even among those who said they didn't do any exercises from the textbook or MyOpenMath, the majority said these exercises were helpful. (One can only speculate that what they they meant was that exercises *would* be helpful).
5. **MyOpenMath exercises are more popular than textbook exercises.** About 35% did as many MyOpenMath exercises as they could, whereas only 15% did as many textbook exercises as they could. And **students consider MyOpenMath exercises more helpful than textbook exercises.** About 50% rated MyOpenMath exercises as very helpful, but only 30% rated textbook exercises as very helpful.
6. There is **no preference between online and “paper” homeworks.**
7. **Assign marks to your homeworks!** Although more than 40% said they would do the exercises even if they didn't count for marks, more than 25% said they would not. The main reasons given for not doing exercises are: “they are not assigned for marks.” (30% said this) and “I don't have time” (30% said this).
8. **Videos are popular and helpful.** Over 30% said they watched as many MyOpenMath videos as they could, and about 65% said that they were very helpful.

II. Limitation:

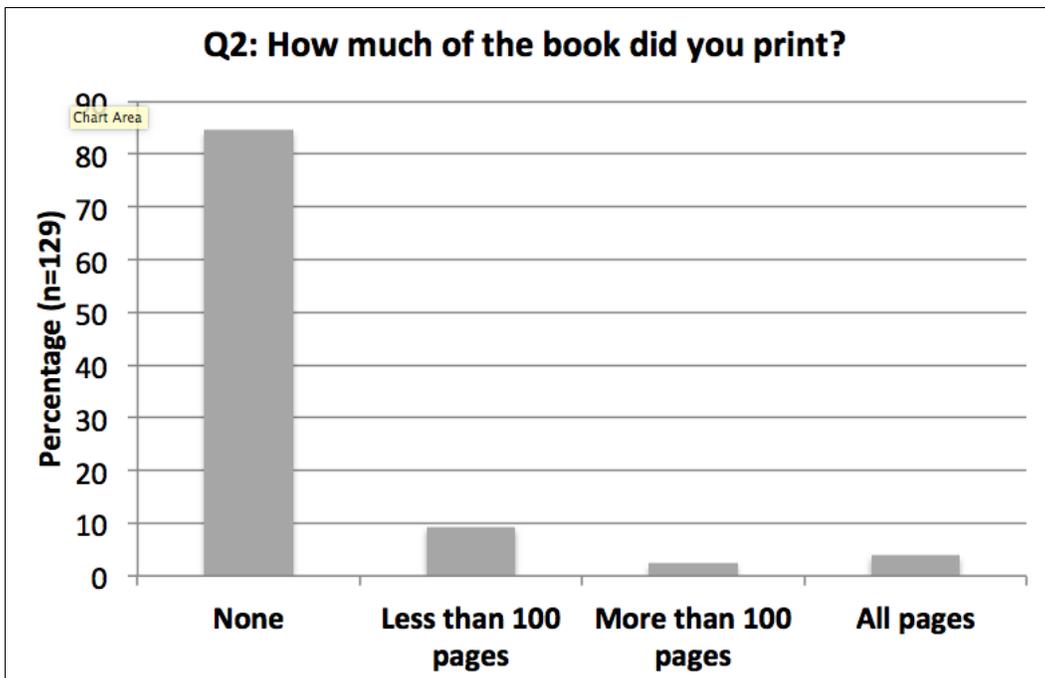
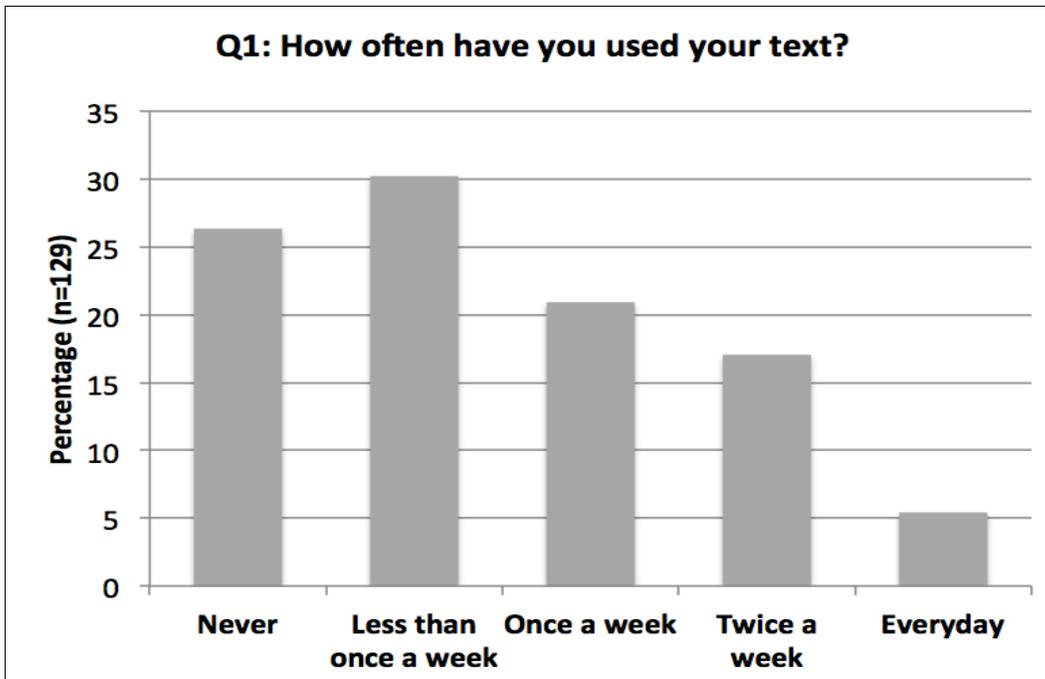
The questionnaire may have been unclear in a couple places. In particular, some students may have felt they had to answer all questions even when it doesn't make sense to do so. For example some students who, in Questions 4 and 6, stated they have done none of the exercises from the textbook or MyOpenMath, answered Question 9, which asks "I do the exercises from the textbook or MyOpenMath because ..."

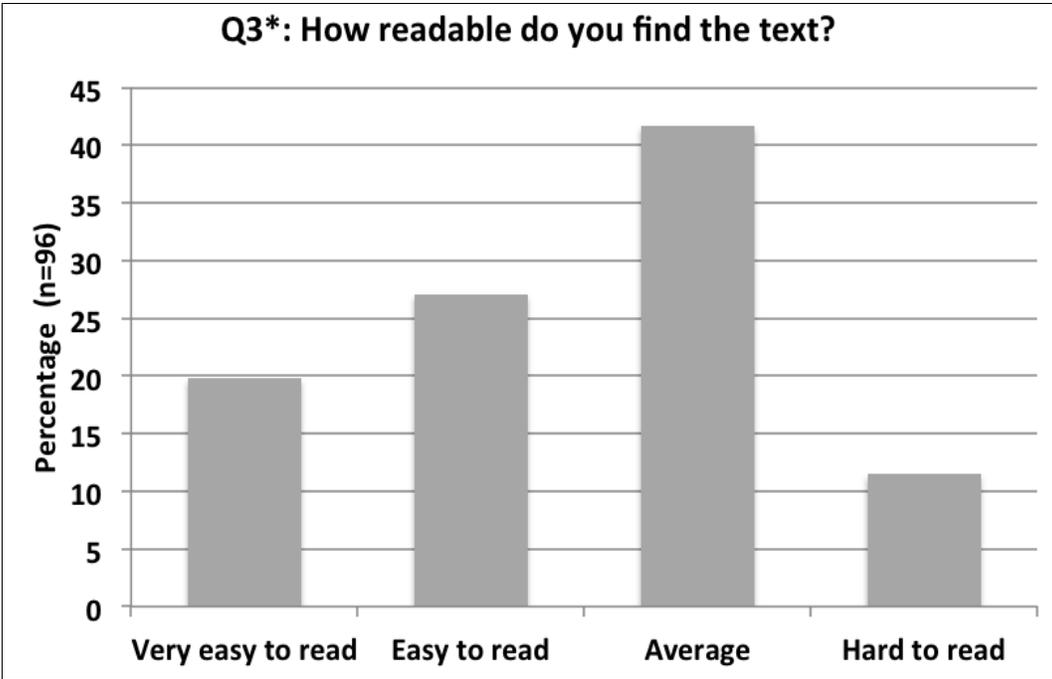
One can only speculate their answer to mean "If I were to do the exercises from the textbook or MyOpenMath, it *would* be because of..."

I have segmented the data, and displayed the bar graphs, to show this anomaly.

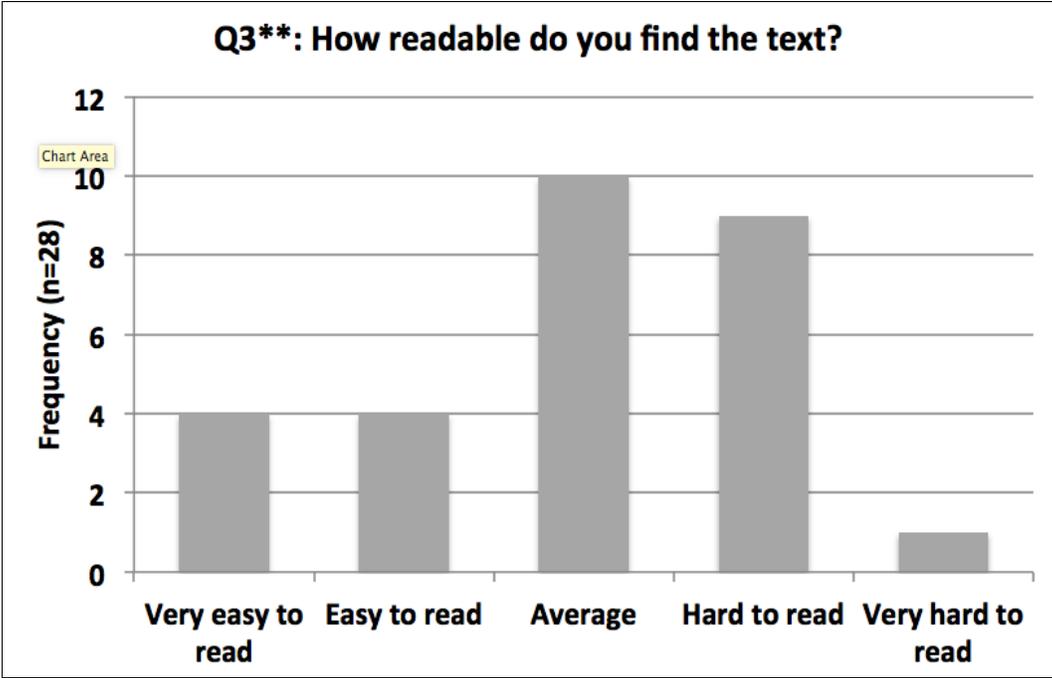
I plan to revise the questionnaire to clarify this issue, if it was to be used again in the future.

III. Bar Charts:

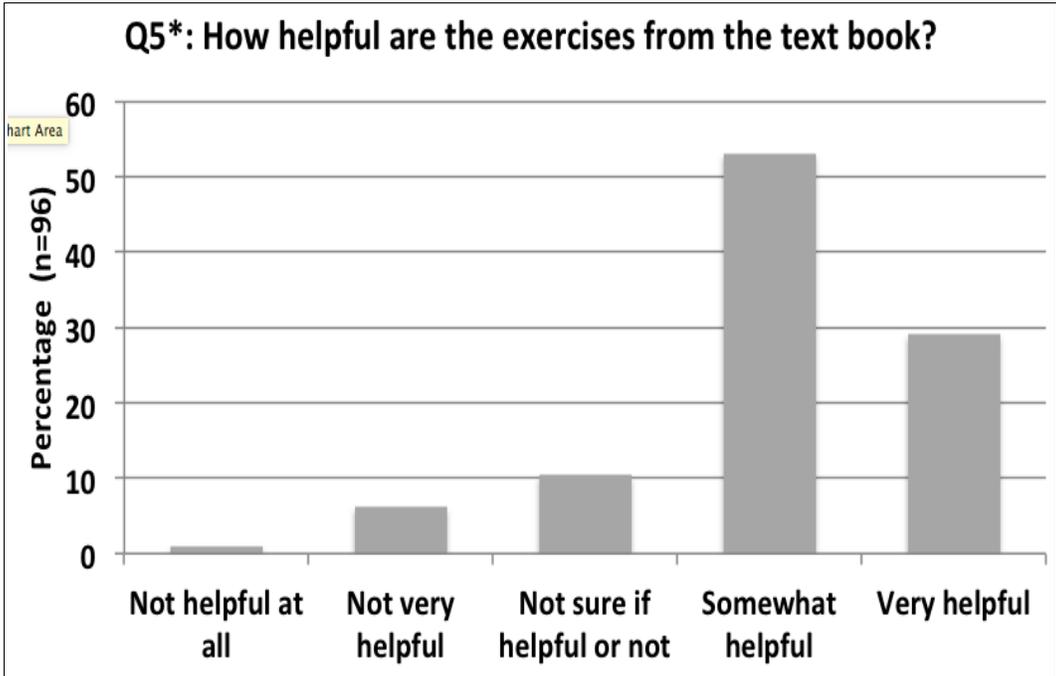
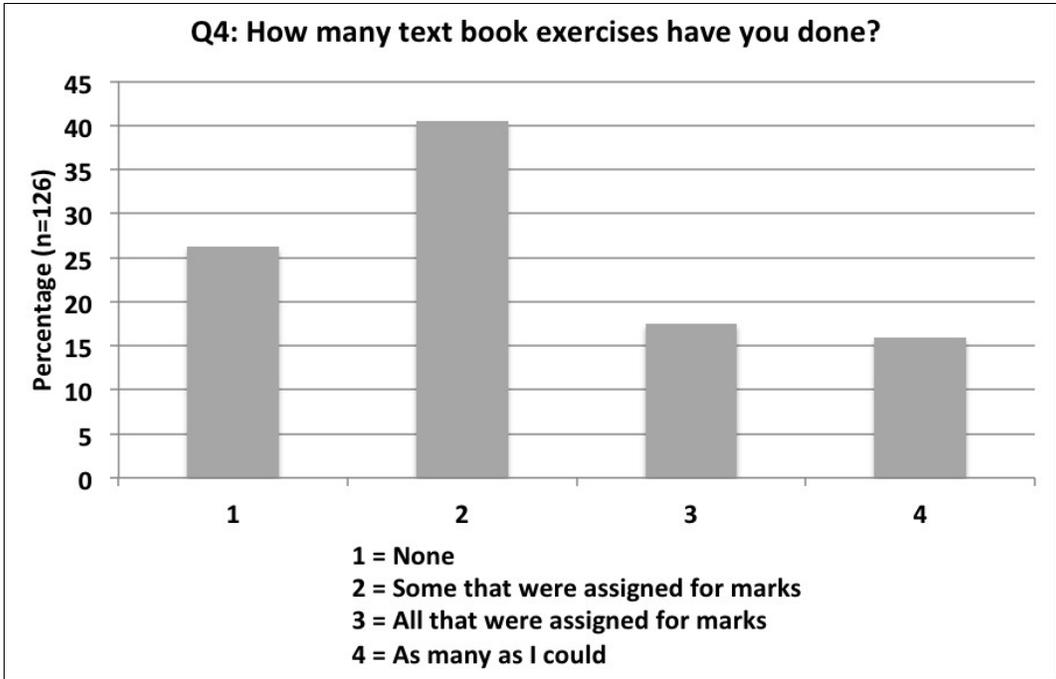




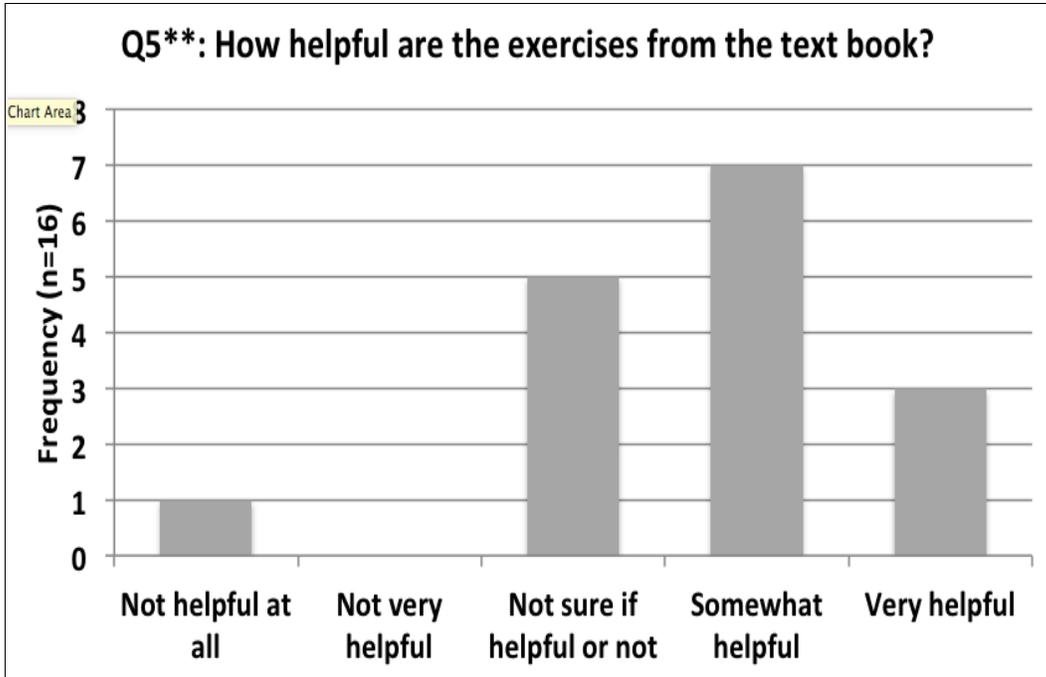
**Among those who did not answer "Never" in Q1.*



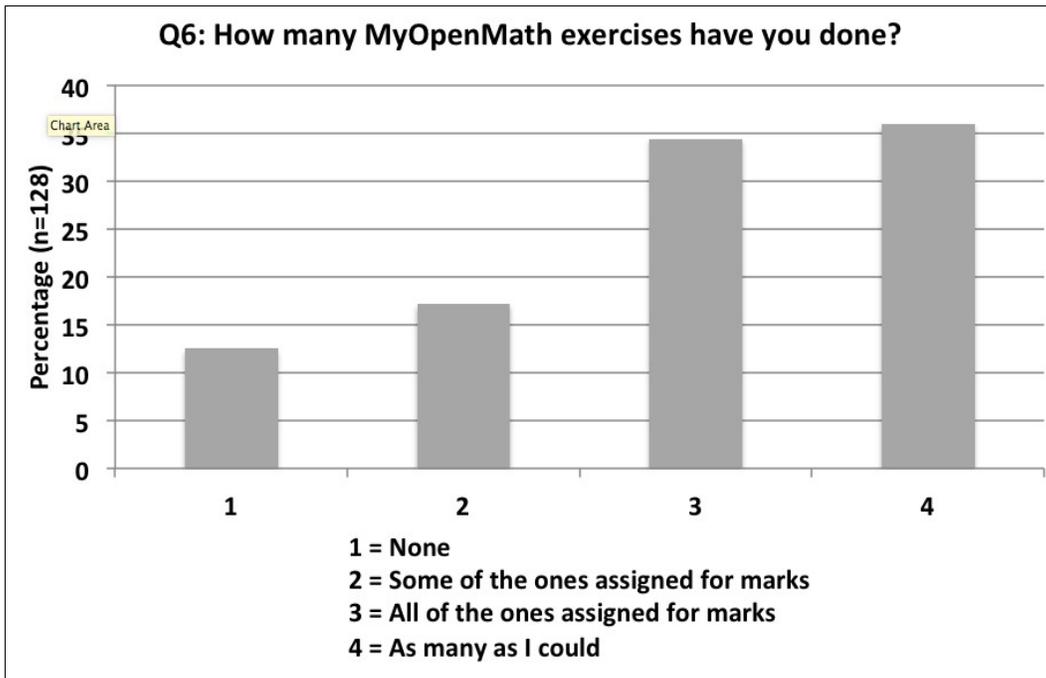
***Among those who answered "Never" in Q1.*

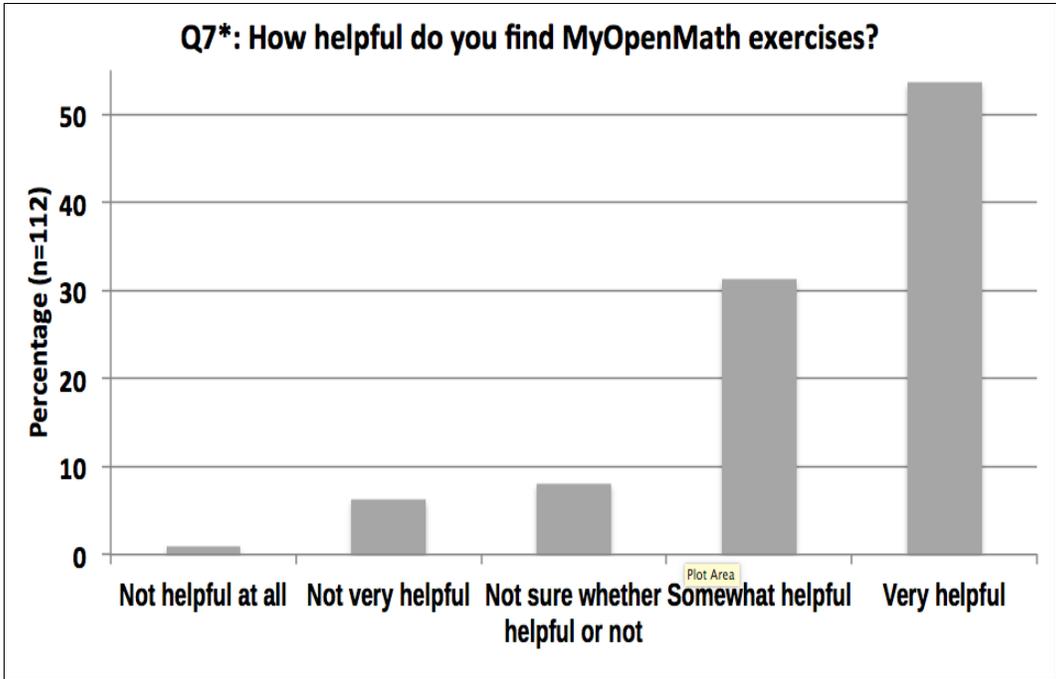


**Among those who did not answer "None" in Q4*

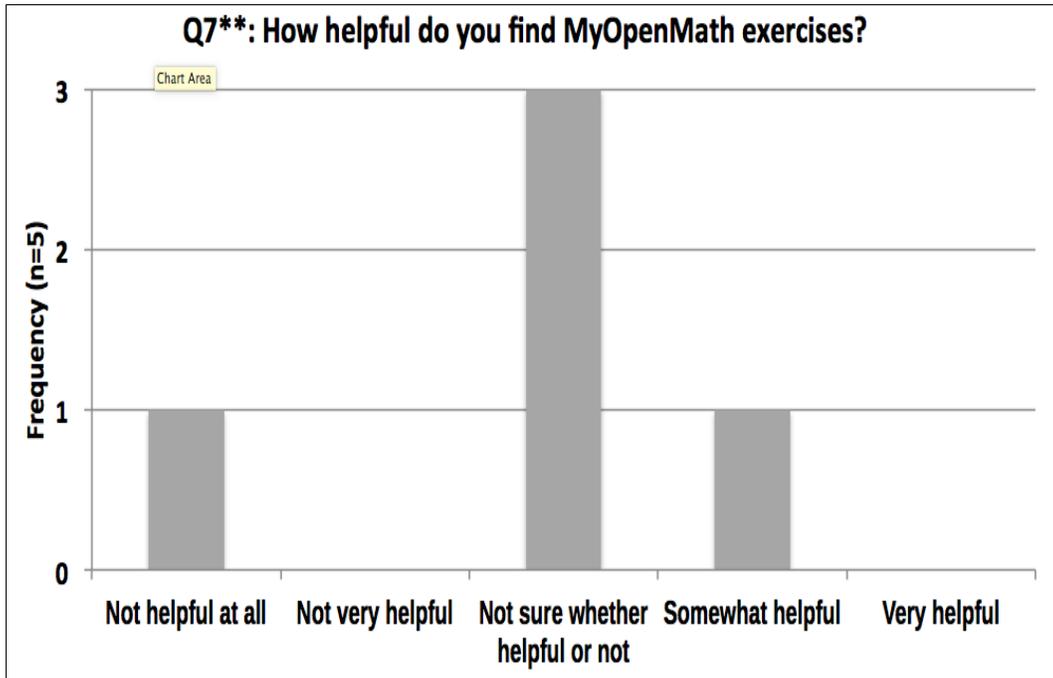


***Among those who answered "None" in Q4*



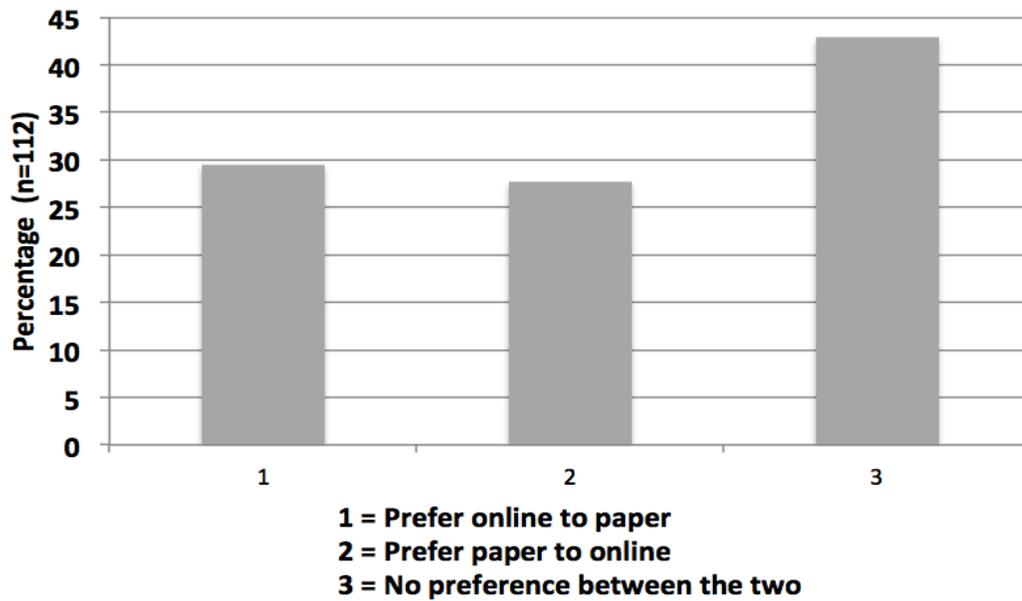


**Among those who did not answer "None" in Q6*

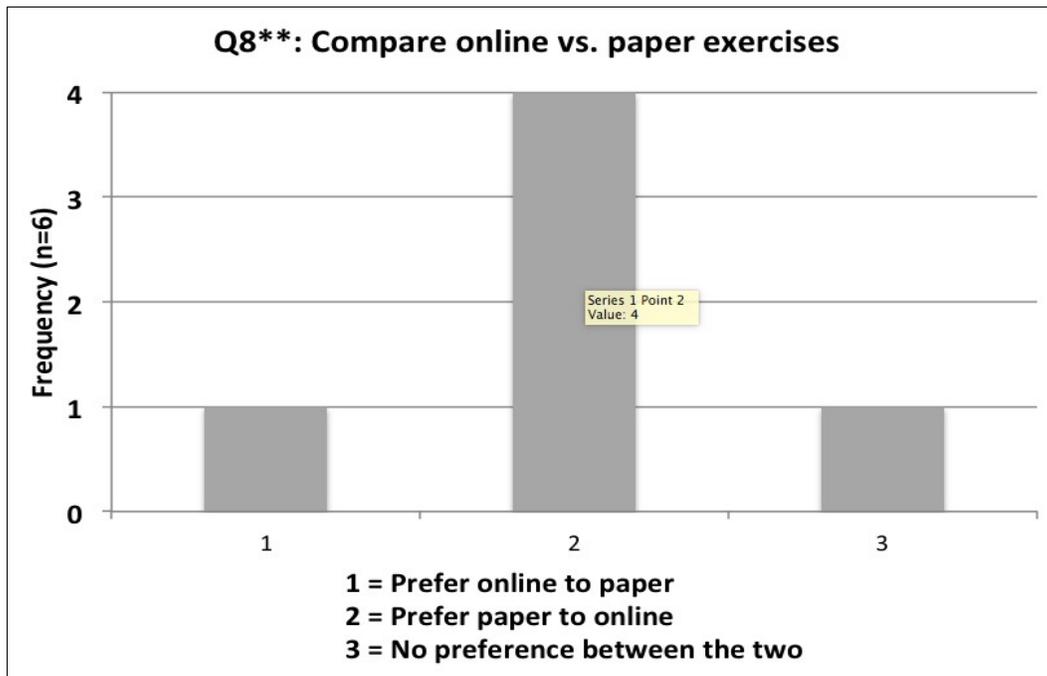


**Among those who answered "None" in Q6.*

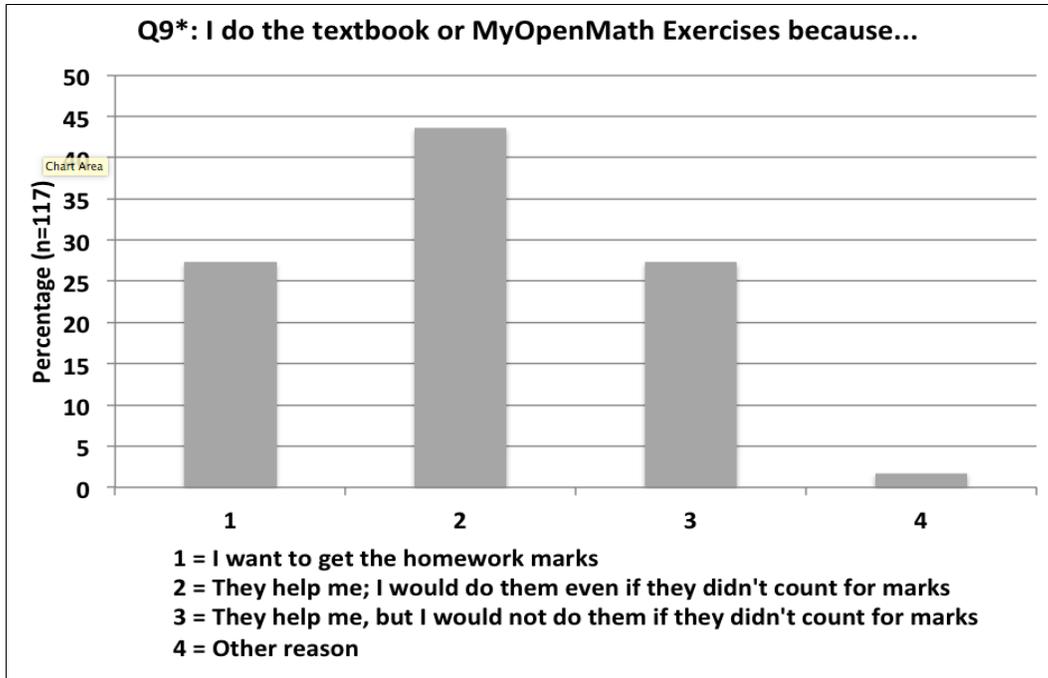
Q8*: Compare online vs. paper exercises



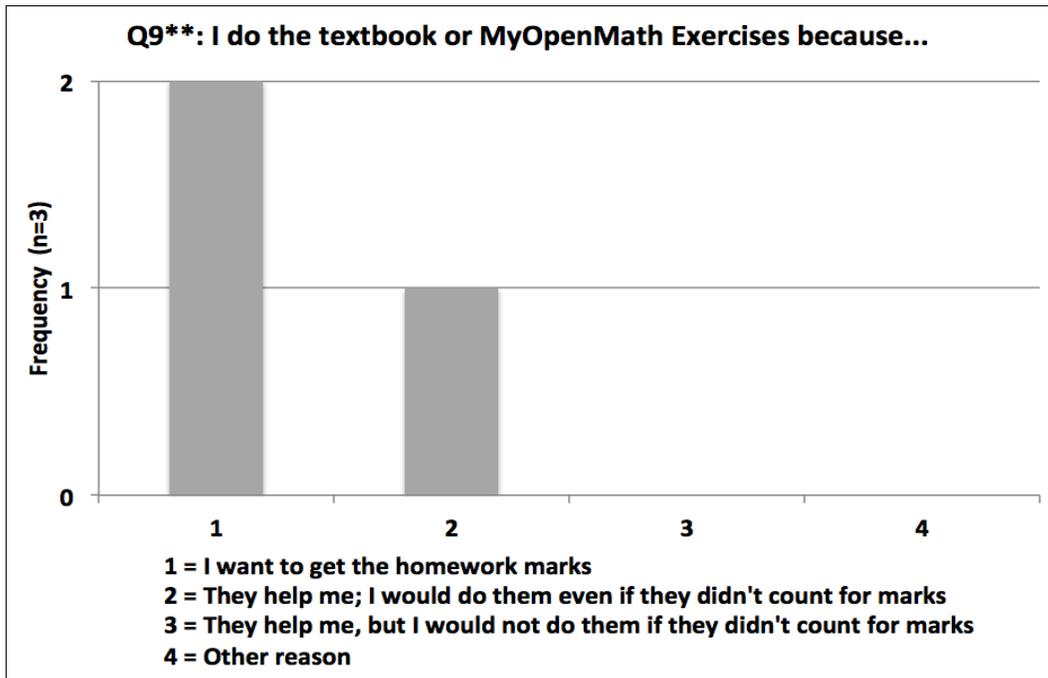
**Among those who did not answer "None" in Q6*



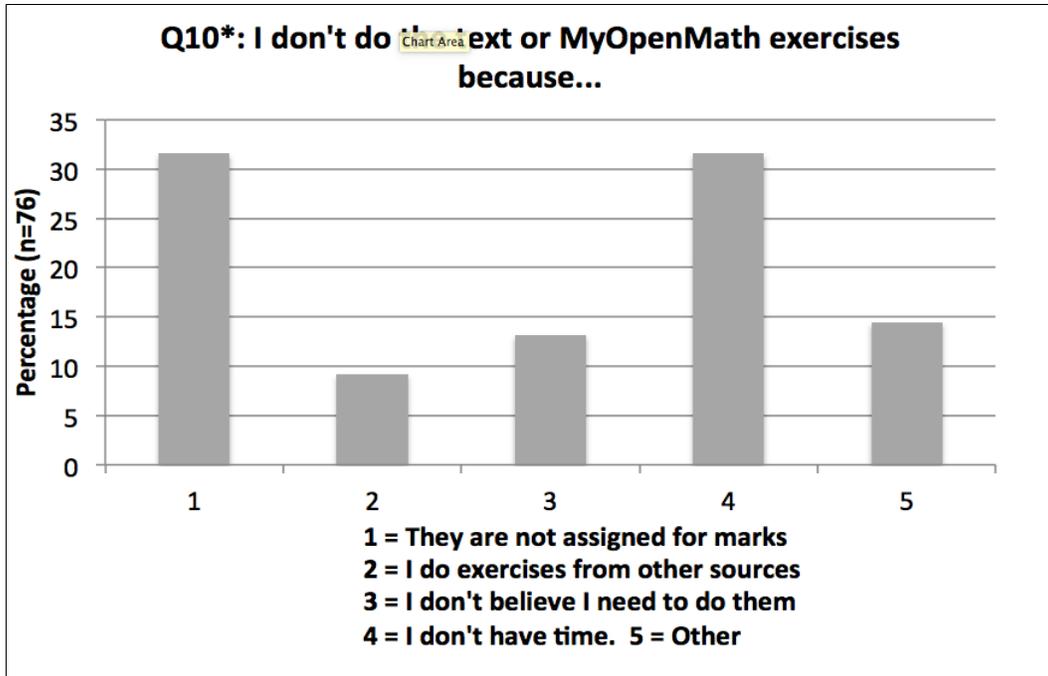
***Among those who answered "None" in Q6.*



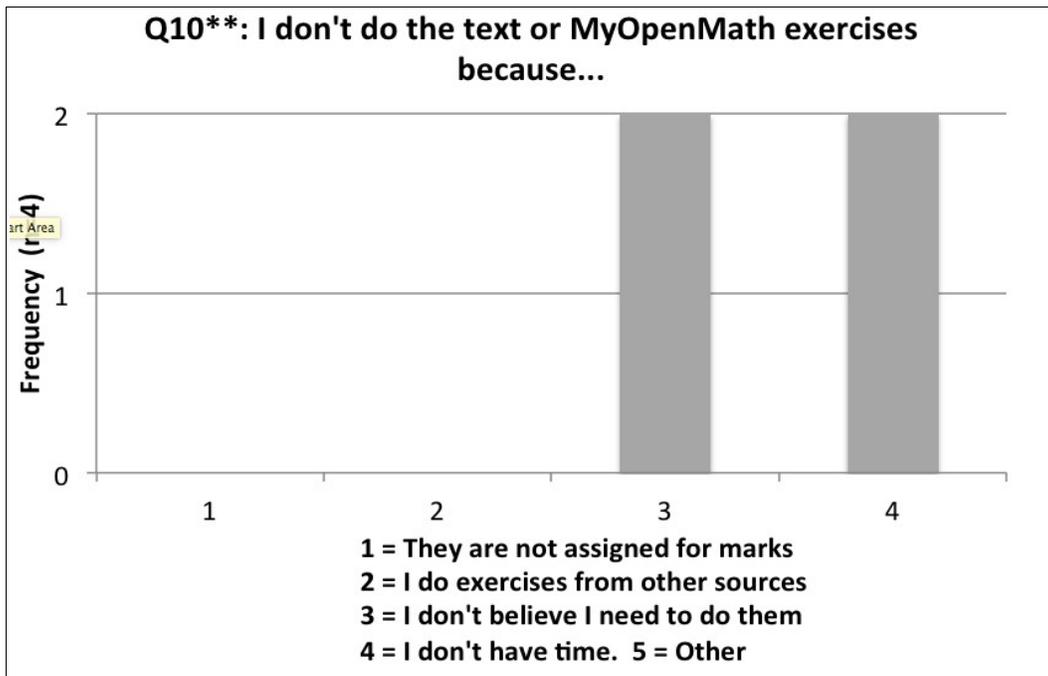
**Among those who did not answer "None" in Q4 and Q6*



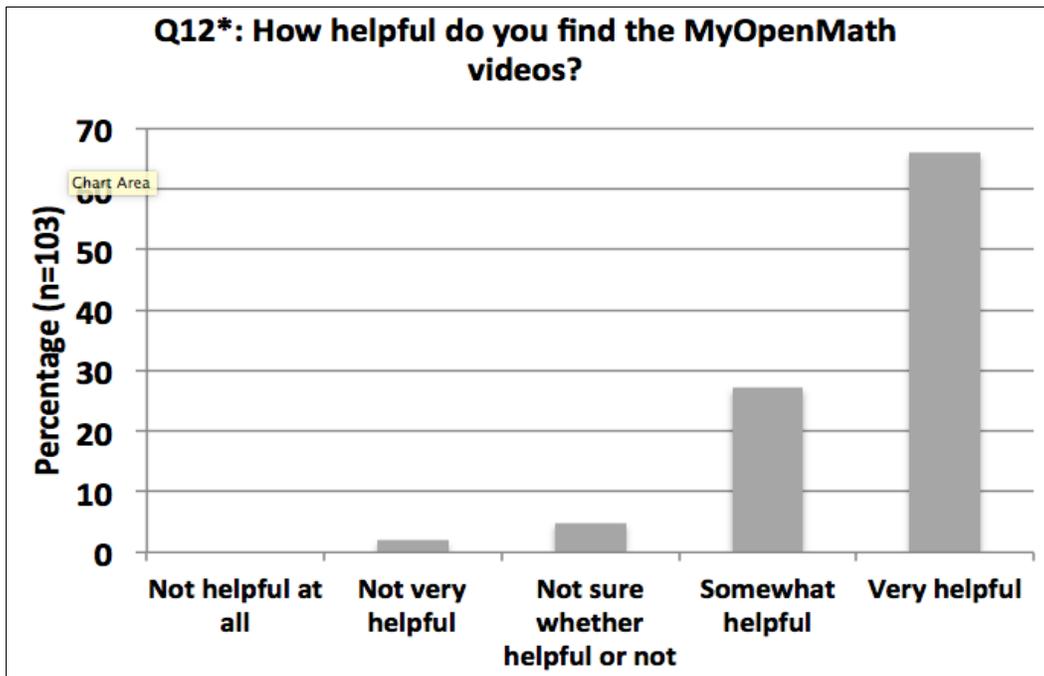
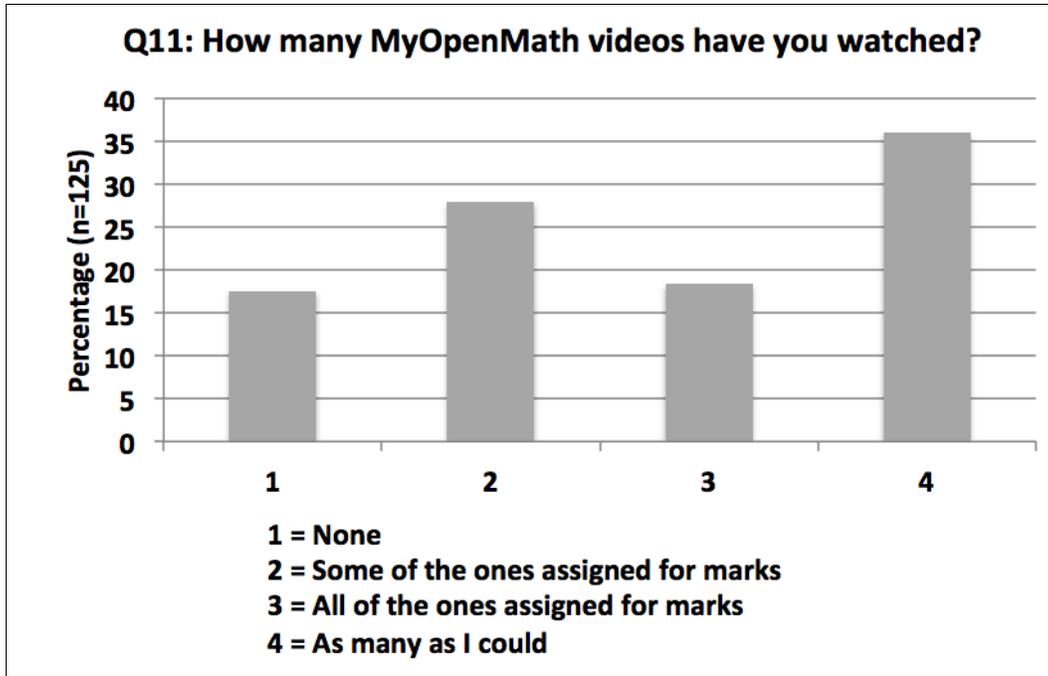
***Among those who answered "None" in Q4 and Q6*



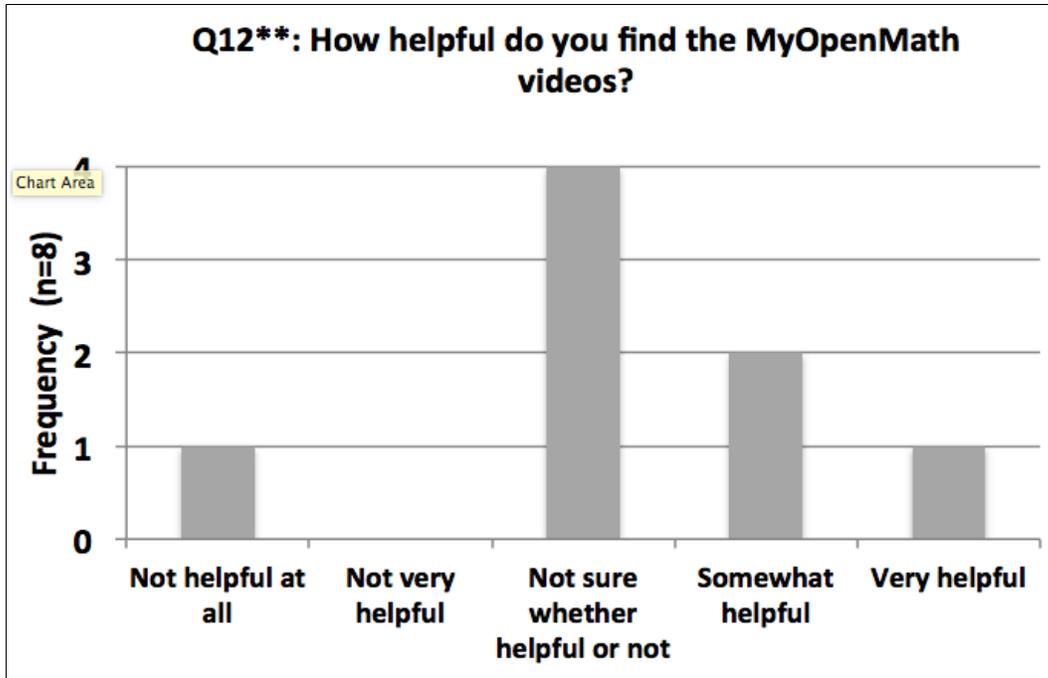
**Among those who did not answer "None" in Q4 or Q6*



***Among those who answered "None" in Q4 or Q6.*



**Among those who did not answer "None" in Q11*



***Among those who answered "None" in Q11*

IV. Questionnaire

Math 1152 Text Book Survey

The current Math 1152 text book is open-source and free. This is obviously a benefit financially. But we would like to know how you find the text in other ways. Please take a few minutes to fill this anonymous survey.

Check one for each question.

1. In this semester so far, how often would you say you have used the text?

- Never.
- Occasionally (less than once a week).
- About once a week.
- About twice a week.
- More or less everyday.

2. How much of the book did you print?

- None.
- Less than 100 pages.
- 100 pages or more.
- All pages.

3. How readable (i.e., easy to understand) do you find the book?

- Very easy to read.
- Easy to read.
- Average.
- Hard to read.
- Very hard to read.

4. How many of the exercises in the text book have you done?

- None.
- Some of the ones assigned for marks.
- All of the ones that were assigned for marks.
- As many as I could.

5. If you have done at least some of the exercises from the text book, indicate how helpful they were in understanding the course materials.

- Not helpful at all.
- Not very helpful.
- Not sure if they were helpful or not.
- Somewhat helpful.
- Very helpful.

6. How many of the online exercises from MyOpenMath have you done?

- None.
- Some of the ones assigned for marks.
- All of the ones that are assigned for marks.
- As many as I could.

7. If you have done at least some of the online exercises from MyOpenMath, indicate how helpful you found them in understanding the course material.

- Not helpful at all
- Not very helpful
- Not sure whether they were helpful or not
- Somewhat helpful
- Very helpful

8. If you have done at least some of the online exercises from MyOpenMath, check one statement that best describes your opinion:

- I prefer online exercises to traditional (paper) exercises.
- I prefer traditional (paper) exercises to online exercises.
- I like online and traditional (paper) exercises equally.

9. If you have done at least some of the exercises, either from the text book or from MyOpenMath, check one statement that best describes your reason: I do the exercises because ...

- I want to get the homework marks.
- I think they help me understand the materials, and I would do them even if they didn't count for marks.
- I think they help me understand the materials, but I would not do them if they didn't count for marks.
- of other reason. Specify _____

10. If you do not do the exercises, either from the text book or from MyOpenMath, choose one statement that best describes your reason. I don't do the exercises because...

- they are not assigned by my instructor, or assigned but not for marks
- I do exercises from other sources Specify _____
- I don't believe I need to do them to understand the materials
- I don't have time
- of other reason. Specify _____

11. How many of the online videos from MyOpenMath have you watched?

- None.
- Some of the ones assigned for marks.
- All of the ones that are assigned for marks.
- As many as I could.

12. If you have watched at least some of the videos. How helpful did you find them in understanding the course material?

- Not helpful at all.
- Not very helpful.
- Not sure if they are helpful or not.
- Somewhat helpful.
- Very helpful.