

**Math 170S**  
**Homework for Section 6.8** \*†  
Instructor: Swee Hong Chan

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**Note:** Homework will not be collected, but the question for the quizzes might be picked from the homework questions.

1. A fictional test for COVID-19 is assumed to be correct 95% of the time, i.e.,
  - If one has the virus, the test results in positive with probability 0.95;
  - If one does not have the virus, the test results in negative with probability 0.95.

From a recent medical research, it is known that only 0.05% of the population have the virus. Given that a fictional person has just tested positive, what is the probability of them having the virus?

2. Solve Problem 6.8-1 in the textbook.
3. Solve Problem 6.8-4 in the textbook.
4. Solve Problem 6.8-5 in the textbook.

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\*Version date: Thursday 16<sup>th</sup> April, 2020, 17:01.

†This homework is based on Hanbaek Lyu's and Liza Rebrova's homeworks from the previous quarter, and I would like to thank her for her generosity here. "*Nanos gigantum humeris insidentes* (I am but a dwarf standing on the shoulders of giants)".