

Homework 2 cover sheet

[Additional information to use with the Homework 2 document](#)

HW 2: Problem 2: In Problem 2, assume k is an integer greater than or equal to 1. The document doesn't list that, but both the problem in the text and the edX statement of the

Submitting numerical answers for simulation problems:

In problem 10b (and later in the course) you are asked to do a simulation and give numerical answer. Obviously, completely correct simulations used to obtain a numerical answer will not all give the same answer. It is always important to develop an estimate of the variability of the results of different (correct) runs of the full simulation. That requires either some theoretical calculations OR doing several "runs" of the entire simulation and noticing the variability in the results. The latter is VERY important when it is inconvenient to do the former.

How many runs? Five runs is convenient because the median provides a reasonable estimate and the spread of results gives insight into the variability. Comparing the difference between the largest and smallest result to the tolerance level for the answer will indicate whether or not the simulations were large enough -- if the difference is too large, either re-run the simulations with more replications in each simulation or do more simulation runs and use the median of the expanded set.

When you have done multiple runs of the full simulation, it is reasonable to use the median of your multiple results for your single answer to estimate the required numerical answer.

HW 2: Problem 10:

The statement of this problem available during Week 2 had choices for answers that are not what you will see on the actual homework as assigned.

10a. Give the answer using 3 decimal places.

10b. Use the method described above to find your answer for this simulation problem and submit it using at least 3 decimal places. For grading, a tolerance level of 0.01 around the answer we find using a larger number of simulations will be used.

The solution key will give a value we obtain using the method described above.

10c. Give the answer using 2 decimal places.

10d. Not a numerical answer. Use the given choices.

Overall comment: It is assumed that students have enough background in statistics to have some familiarity with the basic logic of hypothesis tests and what conclusions can be drawn from them. As you complete this homework, we expect that you will have found a place where you might use that general understanding about hypothesis tests.