University of Waterloo CS240 - Winter 2021 Assignment 1 Post Mortem

Problem 1 [3+3+3 marks]

• For part(c), a few students forgot to mention that $n_0 \ge 1$.

Problem 2 [3+3+3 marks]

• A few students used maximum rule but did not specify the range of n. For example, the range of n to make $(\log n)^3 > (\log n)^2$.

Problem 3 [3+4+4 marks]

- For part(b), Generally some student can't find the final bound. Mostly they got the correct summation.
- For part(c), Generally some student didn't realize that they solve the sloppy recurrence without even mentioning that they are being sloppy.

Problem 4 [5+5+5 marks]

- A few students people for some reason have the same n and in some case the same c for the two algorithms.
- For part(c), most people got caught on this question and tried to prove it.

Problem 5 [2+4 marks]

• Most students think these are almost the same thing and use it interchangeably, or they say that there should be a c that satisfies it but don't make an attempt to define it.

Problem 6 [2+6+3+4+4]

- For part(b), most students do not give an explicit worst case example.
- For part(c), many students did not specify how to split array. Many students don't get a precise way to split the array, and they just take n/k for each sub-array and clamp to n for the last one.
- For part(e), a few student put insertion sort, which is a different idea.