Problem 1  [3+3+3 marks]
- For part (c), a few students forgot to mention that $n_0 \geq 1$.

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.