University of Waterloo
CS240, Spring 2021
Assignment 5 Post Mortem

Problem 1 [4+2+2+4=12 marks]

- For c), some students provided a counterexample such as $n = 5$. This is not enough to disprove the statement for arbitrary large values of n.
- For d), many students did not explain why the two range searches were equivalent or did not modify the bounds properly.
- Other students did not provide a clear method of converting point from S to S'.

Problem 2 [4+6 marks]

- For b), some students forgot to analyze the run-time.
- Many students did not provide details on how to divide the y-coordinates between the two children during the recursive step of their algorithm.

Problem 3 [4 marks]

- Some students got a rather arbitrary string where each 3-length substring of the text T was equivalent to 6 (mod 7). However, this is not the worst case scenario because the it is possible to force our algorithm to make comparisons at every possible instance.

Problem 4 [4+4+4=12 marks]

- For part c), some students did not quite use KMP. This question was graded all or nothing.

Problem 5 [2+4=6 marks]

- For b), some students did not make use of the suffix array, and exceeded the run-time requirement by making too many string-comparisons.

Problem 6 [3+3=6 marks]

- For a), many students did not prove that their condition was necessary (to do this, show that the symbols won't be encoded properly if the condition is NOT met).