

**University of Waterloo**  
**CS240E, Winter 2023**  
**Written Assignment 1 Post Mortem**

This document goes over common errors and general performance on the assignment questions. We create it using feedback from the graders. It is meant to be used as a resource to understand common areas that we can improve in.

**Question 1 [5 marks]**

- This part was well done.

**Question 2 [3+3(+3)=6(+3) marks]**

- This part was well done.
- In part (c), some solutions did not correctly show a boundary case when ( $d = 1/2$  or  $d = 1$ ).

**Question 3 [2+3+7+2(+1)=14(+1)]**

- Parts a-d were well done.
- For part (e) many solutions discussed space complexity rather than time complexity.

**Question 4 [2+6+4=12 marks]**

- Part (a) was well done.
- In (b), many solutions mistakenly omitted terms in the expression for number of nodes, which resulted in an easier solution.
- Also in (b), many solutions stated the final expression either not in simplest terms or not using asymptotic notation.
- In (c), some solutions mistakenly stated the height is three because there are three levels in the tree.

**Question 5 [9 marks]**

- This question was well done.