

**University of Waterloo**  
**CS240 Fall 2020**  
**Assignment 1 Post Mortem**

**Problem 1** [4+4+4+4+4=20 marks]

- For part b), a few students missed the domain for  $n$ .
- For part d) and e), a few students proved for a specific  $c$  value instead of for any  $c$ .

**Problem 2** [4+4+4+4=16 marks]

- Generally some students missed steps or complete mathematical proof.
- For part d), a few students didn't know how to treat  $g(n)$ .

**Problem 3** [4+4+4=12 marks]

- For part a), a few students thought part a) is true and gave an incorrect proof.
- For part c), a few students gave an incorrect or incomplete proof.

**Problem 4** [4+4+4+4=16 marks]

- For part c), a few students gave an incorrect answer as  $O(n^3)$  or  $O(n^4)$ . I would suggest that they go over the property of harmonic series.
- For part d), a few students incorrectly approximated  $\text{ceiling}(\log i)$  to  $\log i$ .

**Problem 5** [4+4=8 marks]

Generally well done!