

University of Toronto Faculty of Arts and Science

CSC165H1S Midterm 1, Version 2

Date: February 6, 2019 Duration: 75 minutes Instructor(s): David Liu, François Pitt

No Aids Allowed

Name:						1	
Student Number:							

- This examination has 3 questions. There are a total of 6 pages, DOUBLE-SIDED.
- All statements in predicate logic must have negations applied directly to propositional variables or predicates.
- In your proofs, you may always use definitions we have covered in this course. However, you may **not** use any external facts about these definitions unless they are given in the question.
- For algorithm analysis questions, you can jump immediately from an exact step count to an asymptotic bound without proof (e.g., write "the number of steps is $3n + \lceil \log n \rceil$, which is $\Theta(n)$ ").

Take a deep breath.

This is your chance to show us how much you've learned.

We **WANT** to give you the credit that you've earned.

A number does not define you.

Good luck!

Question	Grade	Out of
Q1		5
Q2		5
Q3		5
Total		15



 ${\rm CSC165H1S}$, Winter 2019

Midterm 1, Version 2

Use this page for rough work. If you want work on this page to be marked, please indicate this clearly at the location of the original question.

midterm1-v2-test-103-3



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Midterm 1, Version 2

1. [5 marks] Question 1.



 $\mathrm{CSC}165\mathrm{H}1\mathrm{S}$, Winter 2019

 $Midterm\ 1,\ Version\ 2$

2. [5 marks] Question 2.

midterm1-v2-test-103-5



 $\mathrm{CSC}165\mathrm{H}1\mathrm{S}$, Winter 2019

Midterm 1, Version 2

3. [5 marks] Question 3.

midterm1-v2-test-103-6



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Midterm 1, Version 2

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