

PLEASE HAND IN

UNIVERSITY OF TORONTO  
Faculty of Arts and Science  
APRIL/MAY 2009 EXAMINATIONS

PLEASE HAND IN

CSC 165 H1S  
Instructor(s): F. Pitt  
Duration — 3 hours

Examination Aids: *One* 8.5" × 11" sheet of paper, *handwritten* on both sides,  
and one *non-programmable* calculator.

Student Number: \_\_\_\_\_

Family Name(s): \_\_\_\_\_

Given Name(s): \_\_\_\_\_

*Do not turn this page until you have received the signal to start.*  
In the meantime, please read the instructions below *carefully*.

This final examination paper consists of 8 questions on 13 pages (including this one), printed on one side of each sheet. *When you receive the signal to start, please make sure that your copy of the final examination is complete, fill in the identification section above, and write your student number where indicated at the bottom of every page (except page 1).*

Answer each question directly on this paper, in the space provided, and use the reverse side of the pages for rough work. If you need more space for one of your solutions, use the reverse side of a page and *indicate clearly the part of your work that should be marked.*

In your answers, you may use without proof any result or fact covered in lectures, tutorials, homework, tests, or the textbook, as long as you give a clear statement of the result(s)/fact(s) you are using. You must justify all other facts required for your solutions.

Write up your solutions carefully! In particular, use notation and terminology correctly and explain what you are trying to do — part marks *will* be given for showing that you know the general structure of an answer, even if your solution is incomplete.

If you are unable to answer a question (or part), you will get 20% of the marks for that question (or part) if you write "I don't know" and nothing else — you will *not* get those marks if your answer is completely blank, or if it contains contradictory statements (such as "I don't know" followed or preceded by parts of a solution that have not been crossed off).

MARKING GUIDE

- # 1: \_\_\_\_\_/ 15
- # 2: \_\_\_\_\_/ 10
- # 3: \_\_\_\_\_/ 15
- # 4: \_\_\_\_\_/ 15
- # 5: \_\_\_\_\_/ 20
- # 6: \_\_\_\_\_/ 15
- # 7: \_\_\_\_\_/ 15
- # 8: \_\_\_\_\_/ 5

BONUS  
MARKS: \_\_\_\_\_/ 10

TOTAL: \_\_\_\_\_/110