

PLEASE HAND IN

UNIVERSITY OF TORONTO
Faculty of Arts and Science
APRIL 2005 EXAMINATIONS

PLEASE HAND IN

CSC 108H/A08H
Duration — 3 hours

Examination Aids: None

Student Number: _____

Last (Family) Name(s): _____

First (Given) Name(s): _____

Instructor: Baron Campbell Szamosi
(circle one)

Do not turn this page until you have received the signal to start.
(In the meantime, please fill out the identification section above,
and read the instructions below *carefully*.)

MARKING GUIDE

- # 1: _____/ 18
- # 2: _____/ 20
- # 3: _____/ 20
- # 4: _____/ 12
- # 5: _____/ 24
- # 6: _____/ 20

This final examination consists of 6 questions on 18 pages (including this one). *When you receive the signal to start, please make sure that your copy of the examination is complete.*

Comments are not necessary except where we ask for them.

The last page of the exam contains Java API descriptions.

There are blank pages for rough work near the back of the exam paper.

For 2 bonus marks, write you student number in the space provided at the bottom of *both* sides of *every* page of this exam.

BONUS
MARKS: _____/ 2

TOTAL: _____/114

Good Luck!

*[Use the space below for rough work. This page will **not** be marked, unless you clearly indicate the part of your work that you want us to mark.]*

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Short Java API descriptions (everything is public)**Object:**

```
boolean equals(Object o) // = "this Object is equal to o"  
String toString() // = a String representation of this Object
```

Integer:

```
static int parseInt(String s) // = s's value, as an int
```

Double:

```
static double parseDouble(String s) // = s's value, as a double
```

Boolean:

```
static boolean parseBoolean(String s) // = s's value, as a boolean
```

String:

```
String substring(int i, int j) // = the letters from i (inclusive) to j (non-inclusive)  
String substring(int i) // = the letters from i (inclusive) to the end  
int indexOf(String s) // = the index of s in this String; -1 if s is not a substring  
int indexOf(String s, int i) // = the index (counting from the start of the String) of  
// the first occurrence of s at or after index i; -1 if s is not found at or after i  
int indexOf(char c) // = the index of c in this String; -1 if c is not found  
int indexOf(char c, int i) // = the index (counting from the start of the String) of  
// the first occurrence of c at or after index i; -1 if c is not found at or after i  
int compareTo(Object o) // < 0, = 0, or > 0 depending on whether this < o, = o, or > o.  
int length() // = the number of characters in this String  
boolean equals(String s) // = this String has the same contents as s
```

StringTokenizer:

```
StringTokenizer(String s) // Create a StringTokenizer for s with delimiters " \t\n\r\f"  
StringTokenizer(String s, String d) // Create a StringTokenizer for s  
// with the characters in d as delimiters  
boolean hasMoreTokens() // = whether there are more tokens  
int countTokens() // = the number of tokens remaining  
String nextToken() // = the next token
```

File:

```
File(String pathname) // Create a File linked with a file named f
```

BufferedReader:

```
BufferedReader(Reader in) // Create a reader reading from 'in'  
// Return the next available line in the BufferedReader, or null if at end  
String readLine()
```

FileReader:

```
FileReader(String f) // Create a Reader reading from a file named f  
FileReader(File f) // Create a Reader reading from a file f
```

InputStreamReader:

```
InputStreamReader(InputStream in) // Create a Reader reading from in
```

FileOutputStream:

```
FileOutputStream(File f) // Create an OutputStream writing to f  
FileOutputStream(String f) // Create an OutputStream writing to a file named f
```

PrintStream:

```

PrintStream(OutputStream out) // Create a print stream sending output to out
print(String s) // Print s to the output
print(int i) // Print i to the output (similar methods exist for all primitive types)
println(String s) // Print s to the output
println(int i) // Print i to the output and terminate the line
                // (similar methods exist for all primitive types)
println() // terminate the lines

```

System:

```

static InputStream in // input from the keyboard
static PrintStream out // standard output stream

```

Math:

```

static double abs(double a) // = the absolute value of a
static double pow(double a, double b) // = a^b
static double min(double a, double b) // = minimum of a and b
static double max(double a, double b) // = maximum of a and b

```

Container:

```

// add item c in location specified by loc, which is "North", "South", "East", "West", or
// "Center". For example, add(new JButton("A"), "East") adds a new JButton in the east
add(Component c, String loc)
add(Component c) // add c to the next spot in the container
void setLayout(LayoutManager lm) // set this JFrame's layout manager to lm

```

JFrame:

```

JFrame() // An empty window with no title, not visible on the screen
JFrame(String s) // An empty window with title s, not visible on the screen
Container getContentPane() // this JFrame's content pane
int getWidth() // this JFrame's width
int getHeight() // this JFrame's height
int getX() // this JFrame's horizontal coordinate
int getY() // this JFrame's vertical coordinate
void setSize(int w, int h) // set this JFrame's size to w wide and h high
void setTitle(String s) // set this JFrame's title to s
void setLocation(int x, int y) // set this JFrame's location to (x, y)
void show() // make this JFrame visible
void hide() // make this JFrame invisible
void pack() // resize this JFrame according to its content pane's contents

```

JButton:

```

JButton() // A button with no name
JButton(String s) // A button named s
String getText() // = this JButton's name

```

JLabel:

```

JLabel() // A label with no text
JLabel(String s) // A label containing text s
String getText() // = this JLabel's text
String setText(String s) // = set this JLabel's text to s

```