



University of Maryland College Park

Dept of Computer Science

CMSC131 Spring 2011

Midterm I

First Name (PRINT): _____

Last Name (PRINT): _____

University ID: _____

Section/TAName: _____

I pledge on my honor that I have not given or received any unauthorized assistance on this examination.

Your signature: _____

Instructions

- This exam is a closed-book and closed-notes exam.
- Total point value is 100 points.
- The exam is a 50 minutes exam.
- For coding problems you do not need to provide pseudocode and you don't need to specify import statements.
- Please use a pencil to complete the exam.
- **WRITE NEATLY.** If we cannot understand your answer, we will not grade it (i.e., 0 credit).

Grader Use Only

#1	Problem 1 (Short Answers)	(36)	
#2	Problem 2 (Java Code)	(22)	
#3	Problem 3 (Java Code)	(24)	
#4	Problem 4 (Java Code)	(18)	
Total		(100)	

Problem 1 (36 pts)

1. (2 pts) How many bits are in a byte?
2. (2 pts) How many different combinations of 0's and 1's can be represented with 4 bits?
3. (2 pts) Write a single statement that declares two variables, a and b, and initializes them with the values 7.3 and "Goodbye". (Choose an appropriate type.)
4. (2 pts) Java programs are "portable" because the Java compiler translates your source code into what?
5. (2 pts) Name two primitive types used to store integers.
6. (2 pts) What value would Java compute for the following Java code fragments?
 - a) `int x = 1; int y = x / 2; // What is the value of y?`
 - b) `int w = 17 % 3; // What is the value of w?`
7. (2 pts) Which of the following could be used to name variables in Java? We're not asking if they are good style, just whether or not they are permissible. (Circle all that apply.)

Gone# element2 10bridges water@basement

8. (4 pts) Re-write (in the box) the following code fragment using a *for-loop*.

```
int x = 2;
while (x <= 400) {
    System.out.println(x);
    x += 7;
}
```

9. (2 pts) Write the binary representation of 7.

10. (2 pts) What is an assembler?

11. (2 pts) What is pseudocode?

12. (2 pts) What is **null**?

13. (2 pts) Complete the following assignment so we are able to print the message:

Richard "Rick" Smith

```
String name =  
System.out.println(name);
```

14. (2 pts) How many distinct String object instances are created in the following code segment?

```
String value = "Baseball";  
value = "GoodBye";  
String valueTwo = value;
```

Answer: _____

15. (2 pts) Define an integer constant named MAX_OK_TEMP that has as value 99.

16. (2 pts) Write the output generated by the following statements.

```
int y = 10;  
int x = y++;  
System.out.println(y);  
System.out.println(x);
```

17. (2 pts) Will the value of x change in the following code? Briefly explain (yes or no answer with no explanation will receive no credit)

```
int x = 20, y = 10;  
if ( (y >= 10) || (++x > 20)) { }
```

18. (2 pts) The following code fragment generates an error when run. Why?

```
String k = null;  
int x = k.length();
```


