CSE2 Exam 2 Fall 2012 Name_____

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Put your name on each page, or risk having an incompletely graded exam. Raise your hand to notify a proctor if you have a question. After being recognized by the proctor, walk to the front of the room to ask the instructor your question. **No talking, no tapping or other noise. No cell phones, pagers, or other electronics.**

Read the entire exam and answer the questions that seem easiest first. Write answers in the box when provided.

This page: grader use only.

Question 1:	
Question 2:	
Question 3:	
Question 4:	
Question 5:	
Question 6:	
Question 7:	
Question 8:	

Exam Total:

In the exam that follows, do not write in the boxes labeled "Total score".

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total score

1) Write the STDOUT from the following code. If there is no output, write "NONE". If it is an infinite loop, write "∞". 5 points each, 10 points total.

```
//////////Question 1a
int i = 0;
for(i = 5; i > -5; i=i-3){
     System.out.println("i: " + i);
}
```

Output (1a):

```
//////////Question 1b
int i = 0;
for( ; i < 49; i+=7){
     System.out.print(i%6 + "\n" );
}
```

Output (1b):

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total score

2) Given the STDOUT provided below, construct a loop or nested loop that could have generated that output (ignore lines starting with "//"). Note that "…" found at the end indicates an infinite loop that repeats the entire output. Defining a class and a main method is not necessary; just a loop and necessary variables. 5 points each, 10 points total.

```
// Question 2a
[START]
[1]
[2]
[4]
[7]
[11]
[16]
[END]
```

Code (2a):

```
// Question 2b
1
2
22
4
44
444
8
88
888
8888
```

Code (2b):

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3) Write the STDOUT generated by the following code. If the compiler would generate an error, write "CE" to indicate a compiler error, or "RE" to indicate a runtime error. If the output is an infinite loop, write "∞". 5 points each.

```
//// Question 3a
public static void A(int a){
     a += 3*a
}

public static void B(int b){
     b -= b * (2 + 1);
}

public static void main( String args[] ){
     int input = 1;
     for( i = 0; i < 3; i++){
          A ( B( input ) );
          System.out.println( "input: " + input );
     }
}
```

Output (3a):

```
//// Question 3b
public static int A(int a){
     return a*a;
}

public static void main( String args[] ){
     int i = 0, val = 3;
     for(i = 0; i<5; i++){
          val = A(val);
     }

     System.out.println("val: " + val );
}
```

Output (3b):

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4) Given a main method that calls a method called "A()", and a the STDOUT that is generated by the main method, implement the method A(). 10 points.

```
public static void main( String args[] ){
     int i = 0;
     String word = "A";
     for(i = 0; i<4; i++){
          word = A( A(word) );
          System.out.println("v: " + word );
     }
}
```

Output (4):

```
v:  Aaa
v:    Aaaaa
v:      Aaaaaaa
v:        Aaaaaaaaa
```

```
public static String A( String a ){




}
```

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5) In the following code, indicate the type of the variable printed in the method called "A()". If the compiler would generate an error, write "CE" to indicate a compiler error. If an error would be generated at runtime, write "RE" to indicate a runtime error. 5 points each, 10 points total.

```
////  Question 5a
public static int B(double b){
     int c = 2*b
     return c;
}

public static void A( double a ){
     double b = B(a);
     System.out.println("i: " + (c + a) );
}
```

Output (5a):

```
////  Question 5b
public static double B( double b ){
     return b + 7.2;
}

public static int B( int b ){
     return b + 3.5;
}

public static int A( int a ){
     return B(a);
}
```

Output (5b):

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6) Convert all of the following loops into code using **for** loops that produce the same output. 5 points each, 10 points total.

```
// Question 6a
int x=10;
do {
     x += 5;
     System.out.println(x);
} while (x < 10);
```

Answer (6a):

```
// Question 6b
int i=0, j=40;
while (i < 40) {
     while (j > 0) {
          System.out.println(i*j);
          j -= 4;
     }
     i += 2;
}
```

Answer (6b):

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7) Write the STDOUT generated by the following code. If the compiler would generate an error, write "CE" to indicate a compiler error, or "RE" to indicate a runtime error. If the output is an infinite loop, write " ". 5 points each.

```
//// Question 7a
int count = 0;
do {
     System.out.println("Go Lehigh!");
     count++;
} while (count > 10);
```

Answer 7a:

```
//// Question 7b
int i = 0;
for (i = 0; i < 10; i++);
     System.out.println(i + 4);
```

Answer 7b:

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8) Write a method on the next page called m() to compute the following series:

$$m(i) = \frac{1}{3} + \frac{2}{5} + \frac{3}{7} + \ldots + \frac{i}{2i+1}$$

Write a test program below that displays the following table (20 pts):

```
 i  m(i)
 1   0.3333
 2   0.7333
     .
     .
     .
19   8.7602
20   9.2480
```

```
public class Test {



}
```

Put your method m() here:

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