Name _____ Section Number _____

CS110 Exam #1 *** PLEASE TURN OFF ALL CELLPHONES *** Practice
Sections: All Bob Wilson

You may use your crib sheet only (one HANDWRITTEN 8-1/2 x 11 page both sides). You will have all 90 minutes until the start of the next class period. Spend only about one minute per point on each question to complete the exam on time.

1. General Computer Knowledge (10 Points)

a. What does the term ROM mean?

b. What does the term RAM mean?

c. How many bits are there in 4 bytes? _____

d. How many unique values can be represented using 7 bits? _____

e. What do you call data with the following format: 204.192.116.2 _____

2. Java Identifiers and Their Meaning (10 Points)

For each of the following, indicate if it is a valid Java identifier or not. If it is valid, explain what it would identify using the normal naming conventions. If it is not valid, explain why it is not valid.

Identifier	Valid(Yes/No)	Explanation
fooBar	_____	_____
123abc	_____	_____
Ca$h	_____	_____
static	_____	_____ _____
STATES	_____	_____

3. Reserved Words, Classes, Constants, Variables, and Methods (20 Points)

a. In the following outline of a Java program,

Circle all Java reserved words (including primitive data type names)
Draw an arrow (ß)pointing to all Class names
Put an asterisk (*) next to all constant or variable names
Underline all method names

```
import java.util.Scanner;

public class TextBook
{
  private String name;
  private String author;
  private int numberOfPages;

  public static void main(String [] args)
  {
    // code goes here
  }
  public String readIt(int firstPage, int lastPage)
  {
    // code goes here
  }
}
```

b. This class has a method with the name “main”. What does allow?

4. Expression Evaluation (20 Points)

```
String ok = "Okay";
String no = "Nope";
int alpha = 23;
int beta = 14;
double zeta = 0.0;

// Show what is printed for each of the following statements executed in sequence:

   System.out.println(ok  + alpha + beta);          // a. _____

   System.out.println(no  + (alpha + beta));        // b. _____

   System.out.println(zeta  + alpha / beta);        // c. _____

   System.out.println(zeta  + alpha % beta);        // d. _____ _____

   System.out.println(zeta  * alpha + beta);        // e. _____

   System.out.println(zeta  * (alpha + beta));      // f. _____

   System.out.println(alpha  / beta * beta);        // g. _____ _____

   System.out.println(alpha  % beta * beta);        // i. _____

   System.out.println((alpha  < beta)? ok: no);     // h. _____

   System.out.println(++alpha  + ++ beta);          // j. _____
```

5. Selection Statements (20 points)
What is printed by the following code segment?

```
String ok = "Okay";
String no = "Nope";
int alpha = 23;
int beta = 14;
double zeta = 0.0;
                                                    //      Printed? (Yes or No)
if (alpha == beta)
        System.out.println("It's  all Greek to me");    //      a._____
if (alpha <= 2 * beta)
        System.out.println("Gamma");                    //      b._____
if (!ok.equals(no))
        System.out.println("Delta");                    //      c._____
else
        System.out.println("Epsilon");                  //      d._____

        System.out.println("Phi");                      //      e._____

switch (alpha – beta + (int) zeta)
{
        case 0:
                System.out.println("Pi");               //      f._____
                break;

        case 'A':
                System.out.println("Rho ");             //      g._____
                break;

        default:
                System.out.pri ntln("Tau");             //      h._____
                break;
}

if (Math.abs(zeta)  <= 0.000001)
        System.out.println("Upsilon");                  //      i._____


if (no.compareTo(ok ) > 0)
        System.out.println("Omega");                    //      j._____
```

6. Repetition Statements and Arrays (20 points)

a. Study the following class Shape.

```
public class Shape
{
  public static void main (String[] args)
  {
    for (int i = 0; i < 5; i++) {
      for (int j = 0; j < i; j++)
        System.out.print("*");
      System.out.println();
    }
  }
}
```

Draw the output of the Shape class after the JVM invocation shown here:

> java Shape

b. Write a line of Java code that creates an array named “nums” containing 5 int elements.

c. Write a Java “foreach” loop to print the values of all the elements in the “nums” array.

Answer Key for Practice Exam 1:

1.
a. Read Only Memory
b. Random Access Memory
c. 32 (= 4 * 8)
d. 128 (= 2^7)
e. IP Address

2.
a. Yes, a variable name
b. No, begins with a digit
c. Yes, a class name
d. Yes, a Java reserved word
e. Yes, a constant

3.
a. Note: Circling of Java reserved words is shown in **bold**

```
import java.util.Scanner; ß

public class TextBook ß
{
  private String ß name*;
  private String ß author*;
  private int numberOfPages*;

  public static void main(String ß [] args*)
  {
    // code goes here
  }
  public String ß readIt(int firstPage*, int lastPage*)
  {
    // code goes here
  }
}
```

b. The main method allows you to start running the program using this class.
Example - In DrJava Interactions Pane:
> java TextBook

4.

```
> java Prob2
a. Okay2314
b. Nope37
c. 1.0
d. 9.0
e. 14.0
f. 0.0
g. 14
h. 126
i. Nope
j. 39
```

5.

a. No
b. Yes
c. Yes
d. No
e. Yes ß Note: No { } to create a block else clause. Indentation is incorrect format.
f. No
g. No
h. Yes
i. Yes
j. No

6. The output of the Shape class is:

a.

```
> java Shape
   ß blank line here
*
**
***
****
>
```

b.

```
int [ ] nums = new int [5];
```

c.

```
for (int num: nums)
     System.out.println(num );
```