1. Given the following declarations:
   ```java
   int a = 2;
   int b = 3;
   double x = 2.0;
   double y = 1.5;
   double[] list = new double[3];
   ```
   a) Draw a diagram depicting the contents of the array `list` with its default values.

   ![Diagram](image)

   b) For each of the following assignments, if the code is legal Java, redraw the diagram from (a) and circle the element modified by the assignment; otherwise write “ERROR.”
   ```java
   • list[1] = x;         0 1 2
                          0.0 2.0 0.0  
   • list[x] = a;        ERROR
   • list[b - a] = 3;    0 1 2
                          0.0 3.0 0.0
   • list[b] = 4;        ERROR
   ```

2. Show the output produced by the following code fragment:
   ```java
   double[] list = new double[5];
   for (int i=0; i < list.length; i++)
       list[i] = i + 5;
   for (int i=list.length - 1; i >= 0; i--)
       System.out.println(list[i]);
   ```

   ![Output](image)

3. Write a code fragment to create an array named `bunchOfM` of 5 char values and to set them all to the character ‘M’.
   ```java
   char[] bunchOfM = new char[5];
   for (int i=0; i < bunchOfM.length; i++)
       bunchOfM[i] = ‘M’;
   ```

4. Are the following lines horizontal, vertical, or neither?
   ```java
   • new Line(30, 90, 30, 10)  vertical
   • new Line(20, 40, 150, 40) horizontal
   ```
1. Given the following declarations:
   ```java
   int a = 3;
   int b = 2;
   double x = 2.0;
   double y = 1.5;
   double[] list = new double[4];
   ```
   
   a) Draw a diagram depicting the contents of the array with its default values.
   ![Array Diagram]

   b) For each of the following assignments, if the code is legal Java, redraw the diagram from (a) and circle the element modified by the assignment; otherwise write “ERROR.”
   ```java
   • list[x] = 1;  ERROR
   • list[b] = y;  0 1 2 3
   0.0 0.0 1.5 0.0
   • list[b - a] = 3;  ERROR
   • list[1] = -6;  0 1 2 3
   0.0 -6.0 1.5 0.0
   ```

2. Show the output produced by the following code fragment:
   ```java
double[] list = new double[3];
for (int i=0; i < list.length; i++)
    list[i] = i * 5;
for (int i=list.length - 1; i >= 0; i--)
    System.out.println(list[i]);
```  
   Output: 
   ```java
   10.0
   5.0
   0.0
   ```

3. Write a code fragment to create an array named `itsAllTrue` of 100 values of type `boolean` and to set them all to the value `true`.
   ```java
   boolean[] itsAllTrue = new boolean[100];
   for (int i=0; i < itsAllTrue.length; i++)
       itsAllTrue[i] = true;
   ```

4. Are the following ellipses wider than tall or taller than wide?
   ```java
   • new Ellipse(300, 100, 30, 10) wider
   • new Ellipse(200, 40, 100, 40) wider
   ```