1. Given the following code:
   ```java
   int a = 2;
   int b = 3;
   double x = 2.0;
   double y = 1.5;
   double[] list = new double[3];
   list[0] = 4.5;
   list[1] = 8.3;
   list[2] = 0;
   ```
   a) Draw a diagram depicting the contents of the array `list`.
      ```plaintext
      0  1  2
      4.5 8.3 0.0
      ```
   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.”
      ```plaintext
      • list[1] = x;  
        0  1  2
        4.5 2.0 0.0
      • list[b] = 4;  ERROR
      • list[b - a] = 3;  0  1  2
        4.5 3.0 0.0
      • list[x] = a;  ERROR
      ```

2. Show the output produced by the following code fragment:
   ```java
double[] list = new double[4];
for (int i=0; i < list.length; i++)
    list[i] = i + 2;
for (int i=list.length - 1; i >= 0; i--)
    System.out.println(list[i]);
   ```
   ```plaintext
   Output:
   5
   4
   3
   2
   ```
I. Given the following code:

```java
int a = 3;
int b = 2;
double x = 2.0;
double y = 1.5;
double[] list = new double[4];
list[0] = 2.4;
list[1] = 7.8;
list[2] = 10;
list[3] = -1;
```

a) Draw a diagram depicting the contents of the array list.

```
0   1   2   3
2.4  7.8  10.0 -1.0
```

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.”

- `list[3] = x;`
  ```
  0   1   2   3
  2.4  7.8  10.0 2.0
  ```

- `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[4];
for (int i=0; i < list.length; i++)
    list[i] = i * 10;

for (int i=list.length - 1; i >= 0; i--)
    System.out.println(list[i]);
```

Output:

```
30 20 10 0
```