Multiple Choice Questions (10 points)

Answer all of the following questions. READ EACH QUESTION CAREFULLY. Fill the correct bubble on your scantron sheet. Each correct answer is worth 1 point. Each question has EXACTLY one correct answer.

1. Consider
   ```java
   int a = 6;
   int b = 12;
   while(a<b){
       System.out.println("In the loop");
       a+=2;
       b-=2;
   }
   ```
   How many times is the phrase "In the loop" printed?

   A. 1  
   B. 2  
   C. 3  
   D. 4  
   E. 5  

2. In Java, elements of an array are automatically initialized to some default value. What is the default value for the elements of an array of integers?

   A. 0  
   B. "0"  
   C. null  
   D. 1  
   E. '0'
3. You want to initialize all of the elements of a double array `a` to the same value equal to 1.5. What could you write? Assume that the array has been correctly initialized.

A. `for(int i=1; i<a.length; i++) a[i] = 1.5;`
B. `for(int i=0; i<=a.length; i++) a[i] = 1.5;`
C. `for(int i=0; i<a.length; i++) a[i] = 1.5;`
D. `for(int i=0; i<a.length+1; i++) a[i] = 1.5;`
E. `for(int i=0; i<a.length-1; i++) a[i] = 1.5;`
4. Which of the following while statements is equivalent to

```plaintext
do{
    y=x+7;
    x++;
}while(x<9);
```

(You might want to draw a flow chart to figure out the answer)

A. ```plaintext
   y=x+7;
   x++;
   while(x<9){
       y=x+7;
       x++;
   }
```

B. ```plaintext
   while(x<9){
       y=x+7;
       x++;
   }
```
y=x+7;
x++;

C. ```plaintext
   while(x<=9){
       y=x+7;
       x++;
   }
```

D. A and B
E. A, B and C
5. Consider the code

```java
int[] x = {5,6,7,8,9};
int[] y = x;
y[2] = 10;
```

What is the value of x[2]?
A. 6
B. 7
C. 10
D. 8
E. 0

6. Consider the following piece of code:

```java
int i;
for(i=0; i<10; i++){
    /* some code that doesn't modify i */
}
System.out.println("i=",i); /* line A */
```

What is printed by the statement on line A?
A. i=0
B. i=9
C. i=10
D. i=11
E. This piece of code doesn't compile since the scope of i is limited to the for loop.
7. What is printed by the following code fragment?
   int[] a = {0,1,2,3,4,5,6};
   System.out.println(a.length);
   
   A. 5  
   B. 6 
   C. 7 
   D. 8 
   E. Can't tell. There is not enough information.

8. How would you declare and initialize an array, palette, of Color objects of size 6?
   A. Color palette = new Color[5]; 
   B. Color palette[6]; 
   C. Color[5] palette; 
   D. Color[] palette = new Color[6]; 
   E. Color[] palette = new Color[5];

9. The documentation of a class lists a method castToIntArray that has a double array as a formal parameter and returns an array of integers. What is the signature of the method?
   A. public void castToIntArray(double[] a)
   B. public [] castToIntArray(double a)
   C. public int castToIntArray(double a)
   D. public int[] castToIntArray(double[] a)
   E. public int[] castToIntArray()
10. Which of the following is true regarding the continue statement in a for loop?

A. continue transfers the control flow to the initialization statement of the for loop.
B. continue transfers the control flow to the conditional statement of the for loop.
C. continue transfers the control flow to the update statement of the for loop.
D. continue transfers the control flow to the statement just after the for loop
E. continue transfers the control flow to the statement just before the for loop