Loop Statements
While, for, do – while

Which looping statement checks the test condition at the end of the loop?
   a) for  
   b) while  
   c) do-while  
   d) no looping statement do that

Which looping statement checks the test condition at the loop start?
   a) for  
   b) while  
   c) do-while  
   d) a and b

Which looping statement is best used when the number of iterations is known?
   a) for  
   b) while  
   c) do-while  
   d) all looping statement require that the iterations be known

What is wrong with this code snippet?
```java
for(int k = 2, k <= 12, k++)
    System.out.println("K=" + k);
```
   a) the increment should always be ++k  
   b) the variable must always be the letter i when using a for loop  
   c) there should be a semicolon at the end of the statement  
   d) the commas should be semicolons

What is wrong with this code snippet?
```java
int i = 25;
while((i < 10) && (i > 24)) {
    System.out.println(i);
    ++i;
}
```
   a) the logical operator && cannot be used in a condition  
   b) the increment should be i++ instead of ++i  
   c) the test condition is always false regardless of i value  
   d) the test condition is always true regardless of i value

What value is stored in num at the end of this looping?
```java
int num;
for(num = 1; num <= 5; num++) {
}
```
   a) 1  
   b) 4  
   c) 5  
   d) 6
What value is stored in x at the end of this looping?

```java
int x = 1;
while(x < 5) {
    x++;
}
```

- a) 1
- b) 4
- c) 5
- d) 6

What value is stored in i at the end of this looping?

```java
int i = 5;
do {
    i--;
} while(i >= 0);
```

- a) 1
- b) 0
- c) 5
- d) -1

What is the output of the following code snippet?

```java
for(int i = 0; i < 12; i += 2) {
    System.out.print(i + " ");
}
```

- a) 2 4 6 8 10
- b) 2 4 6 8 10 12
- c) 0 2 4 6 8 10
- d) 0 2 4 6 8 10 12

What is the output of the following code snippet?

```java
int i = 10;
do {
    System.out.print(i + " ");
    i--;
} while(i > 5);
```

- a) 9 8 7 6 5
- b) 9 8 7 6
- c) 10 9 8 7 6 5
- d) 10 9 8 7 6

Trace the following program and write its output

```java
int i = 0;
do {
    if(i % 2 == 0) {
        System.out.println("here: "+i);
        i += 2;
    }
    else {
        System.out.println("there: "+i);
        i++;
    }
} while(i <= 5);
```
Trace the following program and write its output
```java
int i = 0;
do {
    if(i % 2 == 0 && i < 4) {
        System.out.println("here: "+ i);
        i += 2;
    } else {
        System.out.println("there: "+ i);
        i++;
    }
} while(i <= 5);
```

What is the output of the following code snippet?
```java
for(int i = 0; i < 5; i++) {
    System.out.print("[ ");
    for(int j = i; j < 4; j++) {
        System.out.print(j + " ");
    }
    System.out.println("]");
}
```

What is the output of the following code snippet?
```java
int i = 5;
do {
    for(int j = i; i > 0; i--) {
        System.out.print(j + " ");
    }
} while(i > 0);
```

Transform the following for loop code snippet:
```java
for(int i = 0; i < 10; i++) {
    System.out.println("The value of i = " + i);
}
```
Into:
- a) while loop
- b) do-while loop
Transform the following do-while loop code snippet:

```java
int i = 0;
do {
    if(i % 2 == 0 & & i < 4) {
        System.out.println("here: " + i);
        i += 2;
    }
    else {
        System.out.println("there: " + i);
        i++;
    }
} while(i <= 5);
```

Into:

a) for loop
b) while loop