

Signature _____

CSE 11

Name _____

Quiz 4

cs11f _____

Fall 2008

Student ID _____

This quiz is to be taken **by yourself** with closed books, closed notes, no calculators.

What is the output produced by the following program? (Hint: draw stack frames)

```
public class Mystery
{
    public static void main( String[] args )
    {
        Mystery ref = new Mystery();

        System.out.println( ref.mystery( 5 ) );
    }

    private int mystery( int a )
    {
        int b = a + 2;

        if ( b >= 5 )
        {
            System.out.println( b );
            b = a + mystery( a - 1 );
            System.out.println( a );
        }
        else
        {
            System.out.println( "Whoa!" );
            b = a;
            System.out.println( a );
        }

        return b;
    }
}
```

Output

Write the equivalent for loop for the following code without using any integer constant (like 101) other than 0 to set the loop variant *i*.

```
int[] a = new int[101];
int i;

i = 0;
while ( i < 101 )
{
    a[i] = i * i;
    ++i;
}
```

What is the value of *i* when the loop terminates? _____

What is the value of *a[20]*? _____

```
int[] a = new int[101];
int i;
// Do not change any code above this comment!
```

A typical operation performed on arrays is sorting the elements in the array in a particular order. As part of many sorting algorithms, two array elements must be swapped with each other. Complete the following `swap()` method to swap two elements in the array `locArray` indexed by *a* and *b* using a temporary local variable as an intermediate storage location.

```
void swap( Location[] locArray, int a, int b )
{
    _____ tmp;

    tmp = _____;

    _____ = locArray[b];

    _____ = tmp;
}
```

Given the following code fragment, rewrite it to use a do-while loop instead. Use the same comments to indicate various actions/tests. Don't forget the semicolon at the end of the do-while statement.

```
System.out.println( "Enter an int between 1 and 10" );
// read input from user

while ( /* User input is not valid */ )
{
    System.out.println( "Enter an int between 1 and 10" );
    // read input from user
}
```