

Signature _____

CSE 11
Quiz 4
Fall 2013

Name _____

cs11f _____

Student ID _____

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

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

```
public class Swap
{
    private int a;

    public Swap( int a )
    {
        this.a = a;
    }

    public void swap( int a, int b )
    {
        int tmp;

        tmp = a;
        a = b;
        b = tmp;
    }

    public void swap( Swap ref )
    {
        Swap tmp;

        tmp = ref;
        ref = this;
        tmp.a = ref.a;
    }

    public static void swap( Swap ref1, Swap ref2 )
    {
        int tmp;

        tmp = ref1.a;
        ref1.a = ref2.a;
        ref2.a = tmp;
    }

    public static void main( String[] args )
    {
        int a = 42;  Swap ref1;
        int b = 64;  Swap ref2;

        ref1 = new Swap(7);
        ref2 = new Swap(2);

        Swap.swap( ref1, ref2 );
        System.out.println( ref1.a );
        System.out.println( ref2.a );

        ref1 = new Swap(7);
        ref2 = new Swap(2);

        ref1.swap( a, b );
        System.out.println( a );
        System.out.println( b );

        ref1 = new Swap(7);
        ref2 = new Swap(2);

        ref1.swap( ref2 );
        System.out.println( ref1.a );
        System.out.println( ref2.a );
    }
}
```

Output

What is the initial value of each array element in the following arrays?

int[] a = new int[5]; _____ boolean[] c = new boolean[7]; _____
Boolean[] b = new Boolean[3]; _____ double[] d = new double[4]; _____

Given the following array declaration:

```
int[] a = { 1, 1, 2, 3, 5, 8, ... }; // You do not know how many values are in the initializer list
```

Fill in the blanks to print out each element:

```
for ( int i = _____ ; i < _____ ; _____ )  
    System.out.println( _____ );
```

Now do the same using a foreach (enhanced for) loop:

```
_____ ( int i _____ )  
    System.out.println( _____ );
```

Now do the same using a while loop (any loop variable change do on a separate line):

```
_____  
while ( _____ )  
{  
    _____  
    _____  
}
```

If you need to directly swap all the i-th and i+1-th elements in an array of 100 elements without using any auxiliary data structure, which type of loop would not be appropriate to use? _____

- A) standard for loop
- B) while loop
- C) foreach/enhanced-for loop
- D) do-while loop

Use the letters associated with possible answers in the box to the right to answer the following questions. Letters may be used more than once.

_____ Only Java data structure that can directly store primitive data type values.

_____ Type of the formal parameter of the equals() method.

_____ Use with == for exact type equivalence checks for objects.

_____ The immediate superclass of array objects.

_____ Type a primitive int value is autoboxed into when an object (vs. a primitive type) is needed.

_____ Has both a capacity and a size, and can dynamically expand when inserting items into it.

_____ Used for within type hierarchy (is-a) equivalence checks for objects.

_____ Defines the default implementations of equals(), hashCode(), and toString() that are automatically inherited from this type into all subclass types if these methods are not overridden in any of the subclass types.

- | | |
|---------------|---------------|
| A) getClass() | I) == |
| B) instanceof | J) Object |
| C) Type cast | K) array |
| D) int | L) Integer |
| E) ArrayList | M) hashCode() |
| F) Class | N) toString() |
| G) boolean | O) Int |
| H) equals() | P) Array |