Level 4 Practice Test 2

Name: _____

1. Create a two dimensional array of Strings that has 3 columns and 4 rows.

2. Rewrite the following switch-statement with the same logic using an if/else block.

```
int num = new Random().nextInt(3);
switch(num){
    case 0:
        System.out.println("none");
        break;
    case 1:
        System.out.println("little");
        break;
    case 2:
        System.out.println("lots");
        break;
    default:
        System.out.println("never happen");
        break;
}
```

3. Create an object of the Entity class that defines T as a String.

```
public class Entity<T>{
      T member;
}
```

4. Consider the following enum:

```
enum Rank{
      FIRST, SECOND, THIRD, FOURTH
}

Rank rank = getRanking(); //implemented elsewhere
```

Write an if/else block that will print a different response based on the value of rank.

5. Write a method called isOddString that takes a String as a parameter and returns a boolean. It should return true if the string has an odd amount of characters and false if it has an even amount.

Example: `isEvenString("water"); //should return true`

6. What is printed when this code is run?

```
try {
    System.out.println("one");
    int x = 10/0;
    System.out.println("two");
} catch (Exception e) {
    System.out.println("three");
}
```

7. Use encapsulation to protect the rgb8Bit member variable in the Color class below. Make sure that the rgb8Bit cannot be set higher than 255.

```
public class Color{
    int rgb8Bit;




}
```

8. What is the output of the following program when run?

```
public class Runner{
    public static void main(String[] args){
        class Super{
            public Super(){
                System.out.println("Super");
            }

            public void run(){
                System.out.println("Top");
            }
```

```
            }

            class Sub extends Super{
                public Sub(){
                    super();
                    System.out.println("Sub");
                }

                public void run(){
                    super.run();
                    System.out.println("Bottom");
                }
            }


            Super sup = new Super();
            sup.run();
            Sub sub = new Sub();
            sub.run();
        }
}
```

9. The following is a matrix that represents the values of a 2D array printed out in row major order.

0	1	2
3	4	5
6	7	8
9	10	11

Complete the code below to properly define the size of the matrix.

```
int[][] matrix = new int[      ] [         ];
```

10. Write a method called countAlphaBeta that takes a String and returns an int. It should return the total number of a's and b's in the String.

Example: `countAlphaZed("Zanzibar"); // should return 3`

11. What would be the output produced by the following code?

```
System.out.println("\"quoted\ntext\"with slashes\\\\");
```

12. Complete the code below so that it will compile?

```
try{
     int y = Integer.parseInt(JOptionPane.showInputDialog("in"));
}
```

13. What is the output of the following program?

```
int[] vals = {1, 2, 3, 4, 5};
for(int i = 0; i < vals.length; i ++){
     vals[i] = vals[i] - vals[i];
}
System.out.println(vals[3]);
```

14. A window is displayed at 500 x 500 pixels. If a 5 x 5 grid was to be displayed in the window so that every cell of the grid is of equal size, what would be the width and height in pixels of each grid cell?

15. Add code to the TV class so that it will compile without errors.

```
public abstract class Electronic
{
    abstract void setDimensions(int w, int h);
}
public class TV extends Electronic
{
    // Add code here



}
```

16. Complete the method below so that it inverts every value of the integer.
Example:
```
    int[] n = {2, -1, 45, -33};
    invertArray(n); // n is now equal to: {-2, 1, -45, 33};

public void invertArray (int[] arr)
{




}
```

17. What is the output when calling `mysteryNum(10);` ?

```
public void mysteryNum(int n){
    System.out.println(n);
    if(n > 0){
        mysteryNum(n - 1);
    }
}
```

18. What are the contents of mtx after the following code segment has been executed?

```
int[][] mtx = {{9, 8, 7}, {6, 5, 4}, {3, 2, 1}};
for(int i = 0; i < mtx.length / 2; i++){
    int[] t = mtx[i];
    mtx[i] = mtx[mtx.length - i - 1];
    mtx[mtx.length - i - 1] = t;
}
```

mtx = [   ][   ][   ]
    [   ][   ][   ]
    [   ][   ][   ]

19. What is printed?

```
String zoo = "zoo";
String z = "";
for(int i = 0; i < zoo.length(); i++){
    z += zoo.substring(i, i + 1);
}
System.out.println(z);
```

20. Explain the error in the code below.

```
class Sensei{
    void teach(){
        super.teach();
        System.out.println("Initializing");
    }
}

class Senpai extends Sensei{
    void teach(){
        System.out.println("Initialized");
    }

}

public void start(){
    Sensei s = new Senpai();
    s.teach();
}
```

How would you fix it so that calling start() would print
```
    Initializing
    Initialized
```
without changing the code inside start?