1. (4 points) Consider the following class TurtleTester definition.

```java
public class TurtleTester {
    public static void mosaic(Turtle t, int side) {
        if (side > 0 && side <= 300) {
            t.square(side);
            t.forward(20);
            mosaic(t, side*2);
            System.out.println("Square side: " + side);
        }
        return;
    }
    // end of mosaic method
    public static void main(String[] args) {
        World w = new World(400, 400);
        //Create a turtle in w at (x,y)
        Turtle jose = new Turtle(200, 400, w);
        TurtleTester.mosaic(jose, 40);
    }
    // end of CLASS TurtleTester
}
```

a. Draw on the square on the right what will be drawn (approximately) by the Turtle jose?

b. Write here what will be printed in the terminal?

c. CIRCLE which of the following expressions corresponds to the base case in the recursive method mosaic?
   A. side >0 && side <= 300  B. side >0 || side <= 300
   C. side <= 0 || side > 300  D. side <=0 && side < 300

2. (2 points) FILL THE 2 GAPS (base case and recursive call) for the method addAllElements. It should implement a recursive method that returns the sum of the numbers in the array numArray, from index i until the end of the array. ASSUME i is NEVER a negative number.

```java
public int addAllElements(int[] numArray, int i) {
    if (__________________________){ // base case
        return 0;
    }
    else { // recursive case
        ______________________________
    }
} // END addAllElements
```
3. (4 points). FINISH the code in the two parts as described and detailed below. a) Create and add a listener. b) Define the listener class.

```java
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
public class ButtonsFrame extends JFrame {
    public ButtonsFrame() {
        JButton jbt1 = new JButton( "Button 1" );
        JButton jbt2 = new JButton( "Button 2" );
        JPanel buttonPanel = new JPanel();
        buttonPanel.add( jbt1 );
        buttonPanel.add( jbt2 );

        // a) WRITE HERE the code to create a MyButtonListener and add it
        // to each of the two JButton defined (jbt1 and jbt2)

        this.setLayout( new BorderLayout() );
        add( buttonPanel, BorderLayout.SOUTH );
        setVisible( true );
    }
} // END OF ClickingFrame

/* b) WRITE THE CLASS MyButtonListener, which should correctly implement the interface MOUSELISTENER, and print (in the terminal, using the standard println method) a different message for each of the Mouse events. */
```

This is how this Frame will look like. You DON’T need to modify the appearance, just add and implement the “listener” for the buttons.