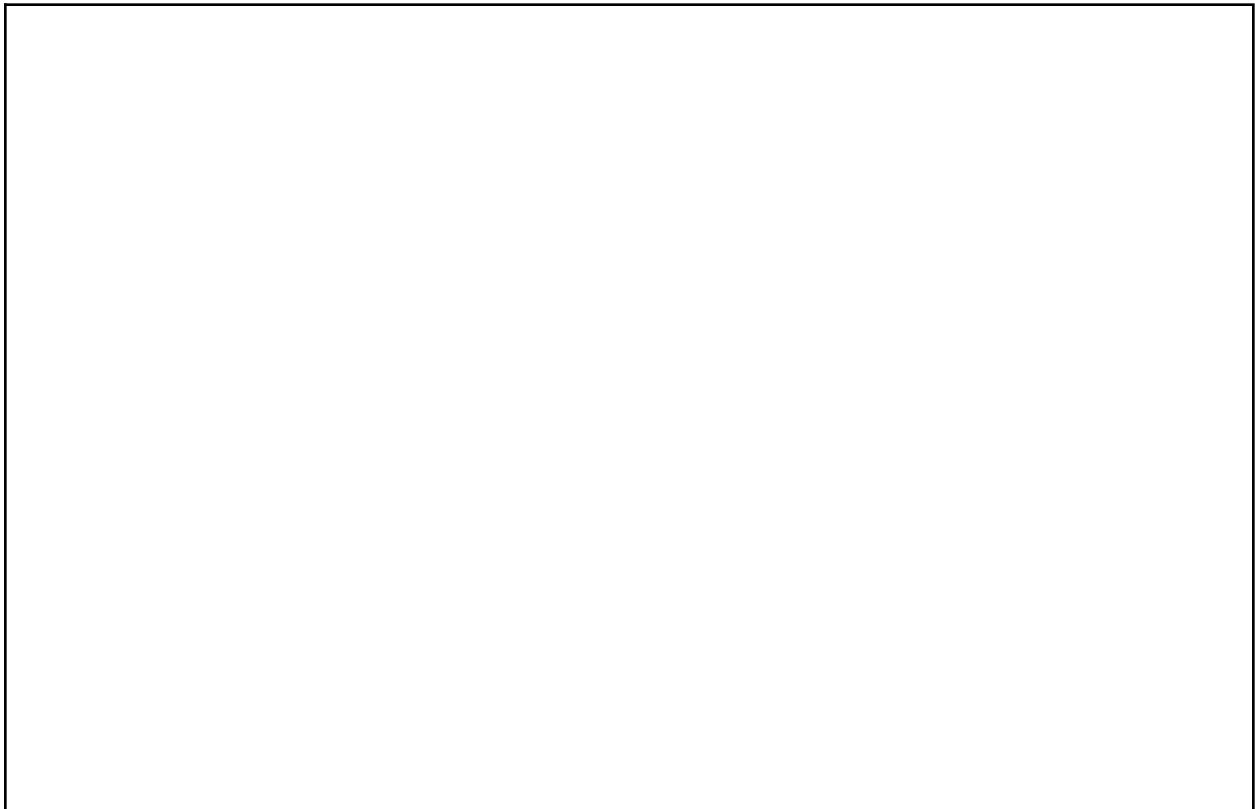# Assignment 1

Instructions: Print this document and complete it by hand. Answer the questions below.

Your name:

Question 1. Trace this method by hand using a Memory Diagram. Show how the value of the variable to be returned changes line-by-line for a call to mystery(7).

```
public static int mystery(int a) {
    int b=a;
    for (int i=0; i<7; i+=2) {
        b+=i;
    }
    return b;
}
```

ANSWER HERE:

Question 2. What is the *return type* of the following method? Find the section in the online textbook Think Java that provides an explanation to this answer and paraphrase (explain in your own words) the answer to this question.

```java
public static double tax(int sum, double taxRate) {
    return sum*(1+taxRate)
}
```

ANSWER HERE:

Question 3. Circle the return statement that will be returned by a call to mystery(9). Add 3 in-line Java comments to explain how the conditionals will be evaluated through the program.

```java
public static boolean mystery(int a) {
    if (a>0 && a<9) {
        if (a+7<20) {
            return true;
        } else if (a==9) {
            return true;
        } else {
            return false;
        }
    } else if (a<20) {
        if (a!=(Math.pow(3, 3))) {
            return true;
        } else if (a+15==24) {
            return false;
        } else {
            return true;
        }
    } else {
        return true;
    }
}
```