Lab 4 Solutions

1.)
```
0   if (x=1)
1   y = 2;
0   z = 3;
0   for(int i=0; i<z; i++){
1   while (x<10)
2   x++;
0   }
0   if (a=2) {
1   b = 5;
1   c=6;
0   }
```

2.) 6

3.) The method problem1 computes n/112 rounded down to the nearest integer.

4.) a.) It is not properly garbage collected because the value will still exist in the array when it is "popped", i.e. there is still a reference to that element.

c.) To fix this:

```
public Object pop()
{
    if (size ==0)
        throw new EmptyStackException();
    Object x = elements[--size];
    elements[size] = null; //remove and garbage collect
    return x;
}
```

d. The ensureCapacity() method is private because the user using a stack object has no need to call this method themselves. We are simply encapsulating this checker method in the Stack class itself and allowing the push operation to do all the work. It will call the ensureCapacity() for us and update the elements array accordingly.

5.) public static int[] myMethod(String param1, double param2);

6.) First line output: 24
Second output: a
Third output: -1
Fourth output: ava Pr
Fifth output: true

7.) First line output: 30.0
Second line of output: 15.0
Third line of output: 9.0
Fourth line of output: 3.0
Fifth line of output: 6.0