CS241 - Spring 2015 -- Quiz 1 **Name**_____ **Score=** **/10**

1. (3 points) Here is a (failed) attempt to implement serial numbers for objects. What will it output? Fix it!

```
public class BrokeSerialExample {
    int nextSerialNumber=1;
    int serialNumber;

    public BrokeSerialExample() {
        serialNumber = nextSerialNumber;
        nextSerialNumber++;
    }

    public static void main(String[] adsf) {
        BrokeSerialExample bse1 = new BrokeSerialExample();
        BrokeSerialExample bse2 = new BrokeSerialExample();

        System.out.println("#2's serial#=" + bse2.getSerialNumber());
}}
```

2. (4 points) Here is the BNF definition of expression. The 6 productions are numbered. Indicate for the following assignment statements how their expressions were derived. Write the numbers in the order the expression would be evaluated (i.e. left to right, following the precedence rules)), and the value of the variable after the assignment.

(Example: x = 1 - (2 + 3); //1, 1, 1, 4, 5, 4 -- x=-4

i.e. 1 is a constant **(1)**, 2 is a constant **(1)**, 3 is a constant **(1)**, 2+3 **(4)**, (2+3) **(5)**, 1-(2+3), **(4)**

<expression> ::= <constant> (1)
| <variable> (2)
| <message expression> (3)
| <expression> <binary operator> <expression> (4)
| (<expression>) (5)
| <unary operator> <expression> (6)

```
int x = 1+1;                          //
int y = x+-2*(3/4)*(int)Math.random(); //
```

3. (3 points) Precedence! Fill in all the Java operators (exclude bit and shift ops) in order by precedence, highest on top! Hint: there are 18, the numbers on the left tell how many in each row.

1	
1	
2	
4	
3	
6	