Zachary Neeley
1/29/19
CS 278 Lab 1

Part 1:

1) In Zip File. Named Lab1 Part 1

2) bars(1000) = 1111
   bars(1001) = 1112
   bars(1002) = 1113
   bars(1003) = 1114
   bars(1004) = 1115
   bars(1005) = 1116
   bars(1006) = 1117
   bars(1007) = 1118
   bars(1008) = 1119
   bars(1009) = 1121

Part 2:

1) In Zip File. Named Lab1 Part 2

2) bars(1000) = 1111
   bars(1001) = 1112
   bars(1002) = 1113
   bars(1003) = 1114
   bars(1004) = 1115
   bars(1005) = 1116
   bars(1006) = 1117
   bars(1007) = 1118
   bars(1008) = 1119
   bars(1009) = 1121

Part 3:

1)
```
public static int Formula(int n) {

    return ((int) (Math.floor(n-1)/9)) + n;

}
```

2) Formula(1000) = 1111
   Formula(1001) = 1112
   Formula(1002) = 1113
   Formula(1003) = 1114
   Formula(1004) = 1115
   Formula(1005) = 1116
   Formula(1006) = 1117

Zachary Neeley
1/29/19
CS 278 Lab 1

Formula(1007) = 1118
Formula(1008) = 1119
Formula(1009) = 1121

3) When n = 0, the formula will return 0 which is correct.

Part 4:

1) The function is Avgcost monotonically increasing

2) No, when the value is 0 AvgCost(n) < AvgCost(n+9)

3) The Avgcost will decrease as n increases.

4) The value of c is 0.9.

5) 100

6) 1000

7) Since the cost is $1 per bar, also knowning that we always redeem 10 coupons. The average cost per bar is $0.90

Part 5:

1) I would say a fair cost for a coupon would be around 15 cents.

2) Yes, the store owner took advantage of the kid, which the kid paid the price of $1.15 for a $1 bar.