Question 1:

The output is : 1st column is the size, second is the average #operations for naive algorithm and the third is the average #operations for Karatsuba algorithm.

1,1,1
2,7,9
3,34,39
4,34,39
5,145,135
6,145,135
7,148,141
8,148,141
9,595,435
10,595,435
11,598,441
12,598,441
13,613,465
14,613,465
15,616,471

The karatsuba algorithm make less recursive calls than the naive algorithm however it does make twice addition and subtraction operations, hence why it is less efficient to calculate the multiplication of numbers with small size. As for big sizes (larger than 4), the Karatsuba algorithm is more efficient as the gap between the #operations keep increasing as the size increase.