4) (10 pts) ALG (Hash Tables)

Insert the following numbers (in the order that they are shown…..from left to right) into a hash table with an array of size 12, using the hash function, H(x) = x mod 12.

234, 344, 481, 567, 893, 178, 719, 686, 46, 84

Show the result of the insertions when hash collisions are resolved through

a) linear probing

b) quadratic probing

c) separate chaining

Index	**a** **Linear**	**b** **Quadratic**	**c** **Separate chaining**
0	46	84	84
1	481	481	481
2	686	686	
3	567	567	567
4	84		686
5	893	893	893
6	234	234	234
7		46	
8	344	344	344
9			
10	178	178	178->46
11	719	719	719

Grading: 3 pts total for Linear Probing, 3 pts for Separate Chaining Hashing, 4 pts for Quadratic Probing. Give full credit if all the answers are correct, 2/3 or 3/4 is most of the answers are correct, 1/3 or 1/4 if some answers but no more than half are correct, 0/3 or 0/4 if none of the answers in a column are correct.