

1) With a RBT of black height k .

Minimum : $2^k - 1$

Maximum : $2^{2k} - 1$

2)

A[0]:

A[1]:10,37,19

A[2]:20

A[3]:12

A[4]:58,4

A[5]:

A[6]:33,15

A[7]:

A[8]:17

3)

66->790

67->408

68->26

69->644

70->262

4) Linear probing:

0 22

1 88

2

3

4 4

5 15

6 28

7 17

8 59

9 31

10 10

Quadratic probing:

0	22
1	
2	88
3	17
4	4
5	
6	28
7	59
8	15
9	31
10	10

Double hashing:

0	22
1	
2	59
3	17
4	4
5	15
6	28
7	88
8	
9	31
10	10