CSE 373: Section 4

AVL and Hashtables

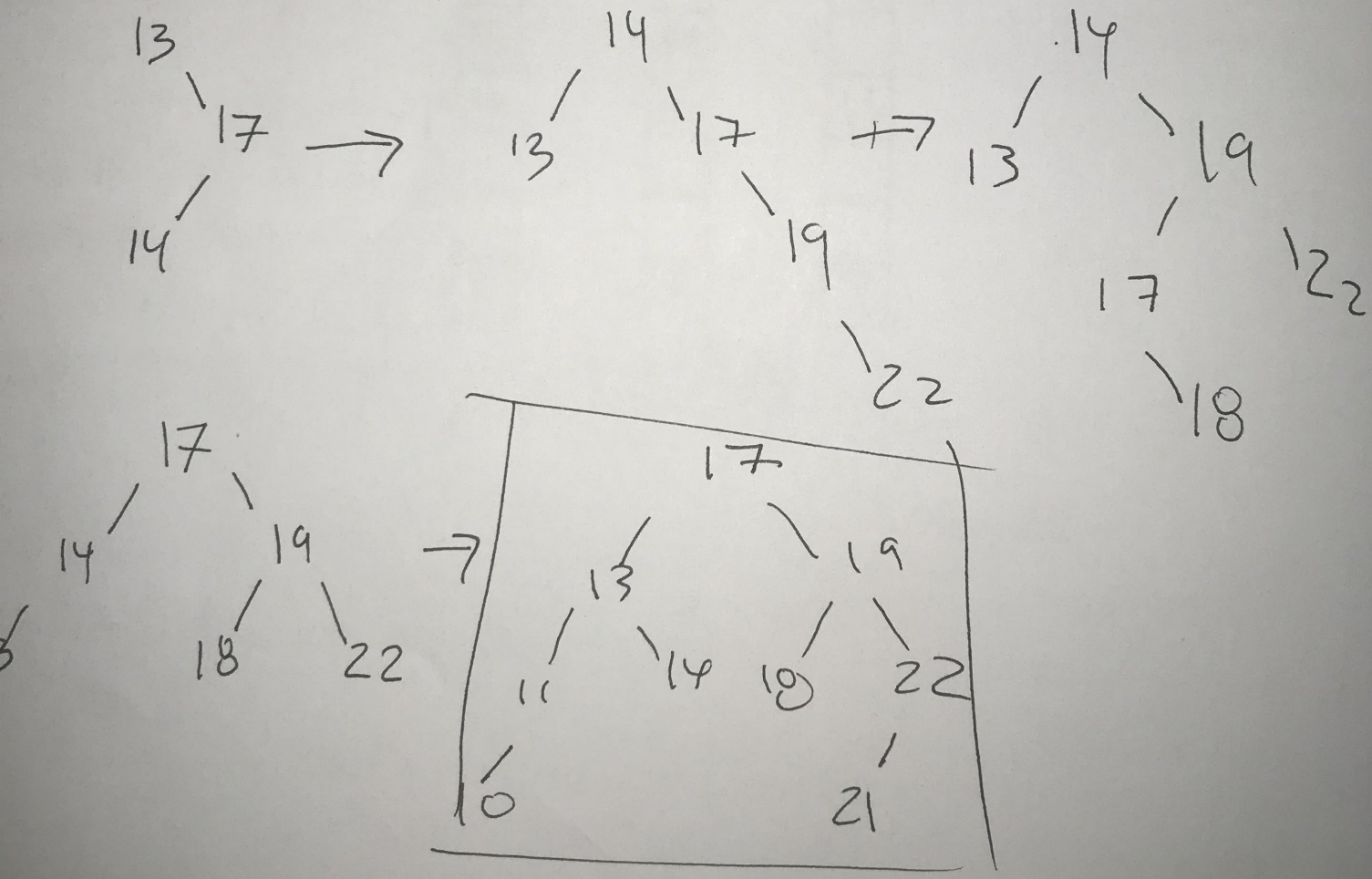
October 19th

1 AVL insertions

Show an AVL Tree as each of the following keys are added (in the order given). You may ignore their corresponding values.

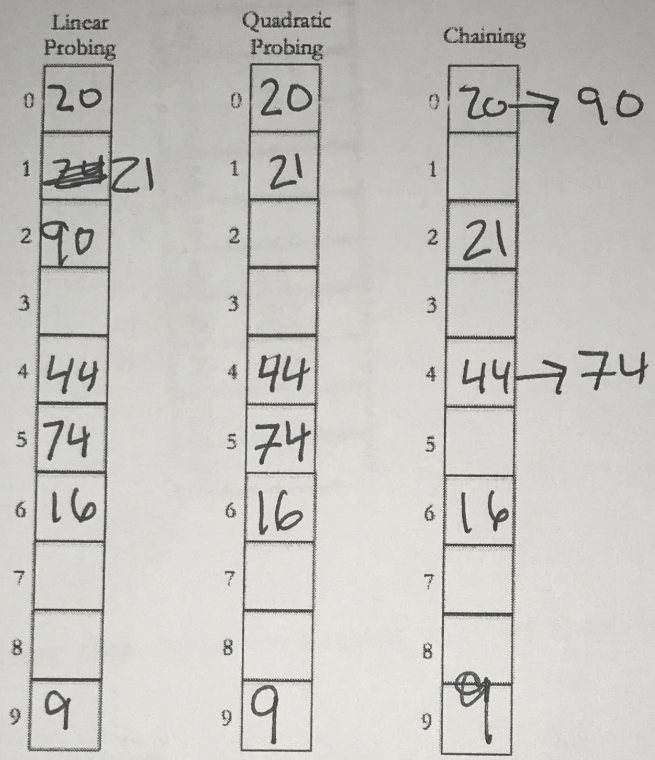
$$\{13, 17, 14, 19, 22, 18, 11, 10, 21\}$$

Show the tree at each step.



2 Hashtable Insertions

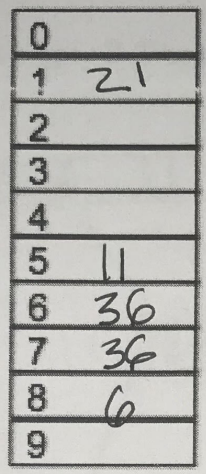
Insert data with integer hash values 21, 44, 74, 16, 9, 20, 90 in the given order into a table of size 10. Insert using linear probing, quadratic probing and separate chaining with linked lists.



fail (90)

3 Secondary Hashing

Consider the following table which inserts values using secondary hashing with a primary hash function $h(k) = k\%10$ and a secondary hash function $g(k) = 7 - (k\%7)$. Insert the following values: 21, 36, 36, 11, 6 into the hashtable



1. Give a single integer that, when we attempt to insert it into the table results in an infinite loop.

51 $g(k) = 7 - 2 = 5$

2. Is there any way we can avoid double-hashing resulting in an infinite loop? Explain your answer.

If $g(k)$ % table size $= 0$, then we set $g(k) = 1$ (use linear probing)