Quiz 3

Deadline	Friday, 26 June 2020 at 11:59PM
Latest Submission	*no submission yet*
Maximum Mark	4

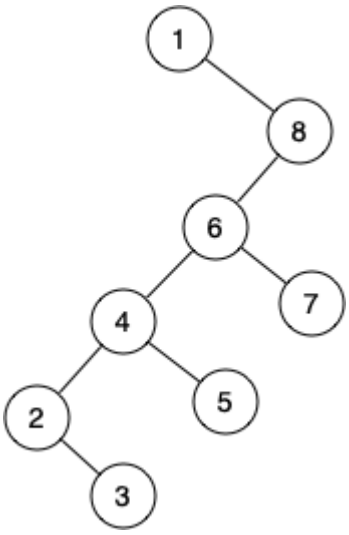
Question 1 (1 mark)

If the following values are inserted into an initially empty *splay tree* (using the algorithm from the slides)

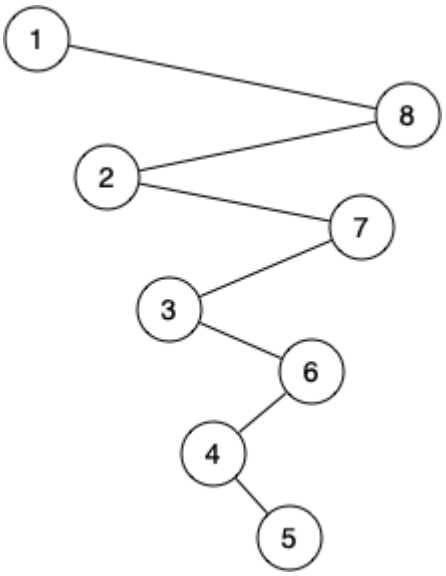
5 4 6 3 7 2 8 1

then what is the final tree structure?

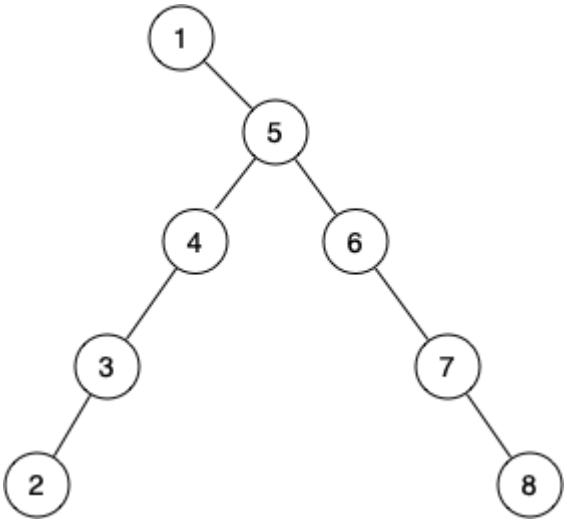
(a) ○



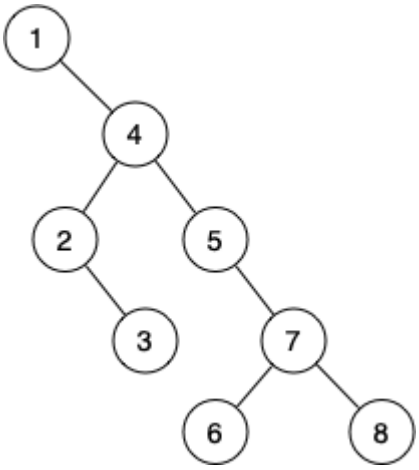
(b) ○



(c) ○

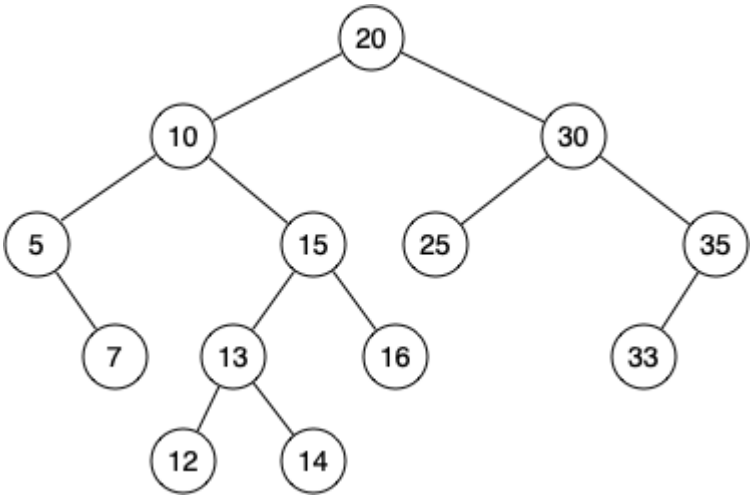


(d) ○



Question 2 (1 mark)

What are the heights of the left and right subtrees in the following AVL tree?

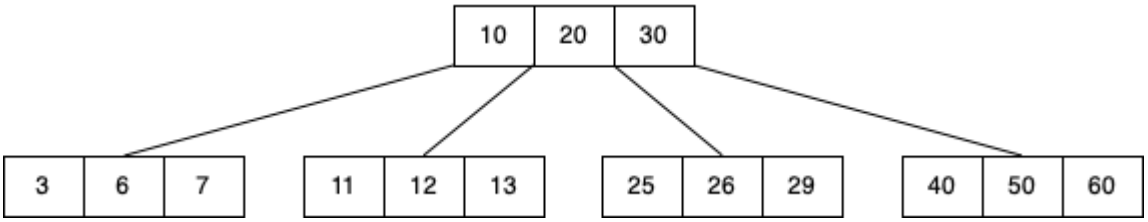


Height is measured in terms of the number of links in the longest path from the root of the subtree.

(a) ○	height(L) = 3, height(R) = 2
(b) ○	height(L) = 4, height(R) = 3
(c) ○	height(L) = 8, height(R) = 4
(d) ○	height(L) = 2, height(R) = 2
(e) ○	None of the above

Question 3 (1 mark)

Consider the following 2-3-4 tree:



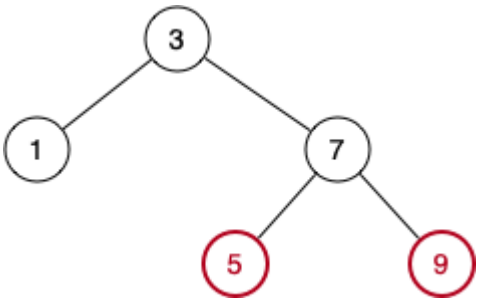
What value(s) will be in the new root node after insertion of the value 15?

(a) ○	10
(b) ○	15
(c) ○	20
(d) ○	30

(e) ○	10,20
(f) ○	15,20
(g) ○	20,30
(h) ○	None of the above

Question 4 (1 mark)

Consider the following red-black tree



How many rotations are performed when the value **6** is inserted into this tree

(a) ○	0
(b) ○	1
(c) ○	2
(d) ○	3
(e) ○	More than 3

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