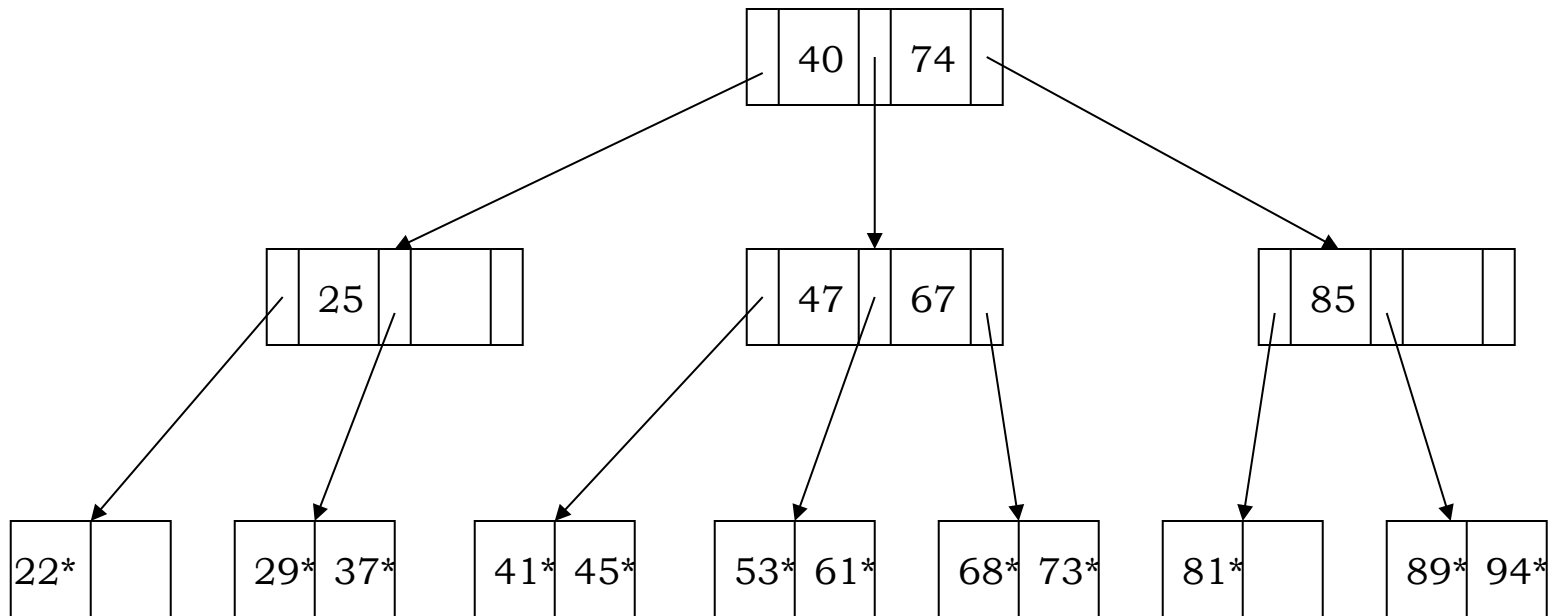


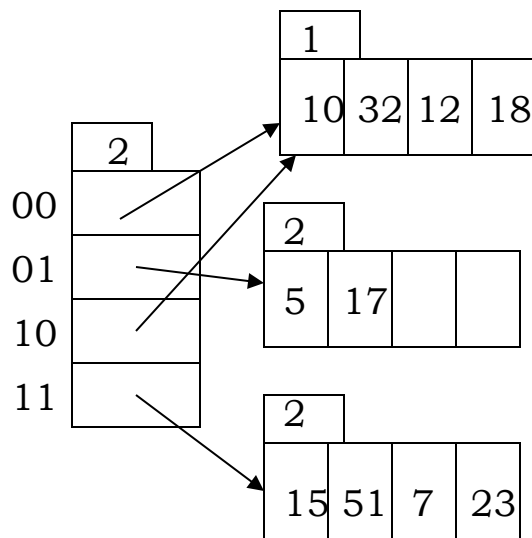
1. (5 pts) Consider the B+ tree below.



Note that this tree does not show data nodes, and you do not need to see the data nodes to answer this question. At each leaf, N^* is an index of the form $\langle N, \langle \text{page id, slot \#} \rangle \rangle$, where N is the value of the search key.

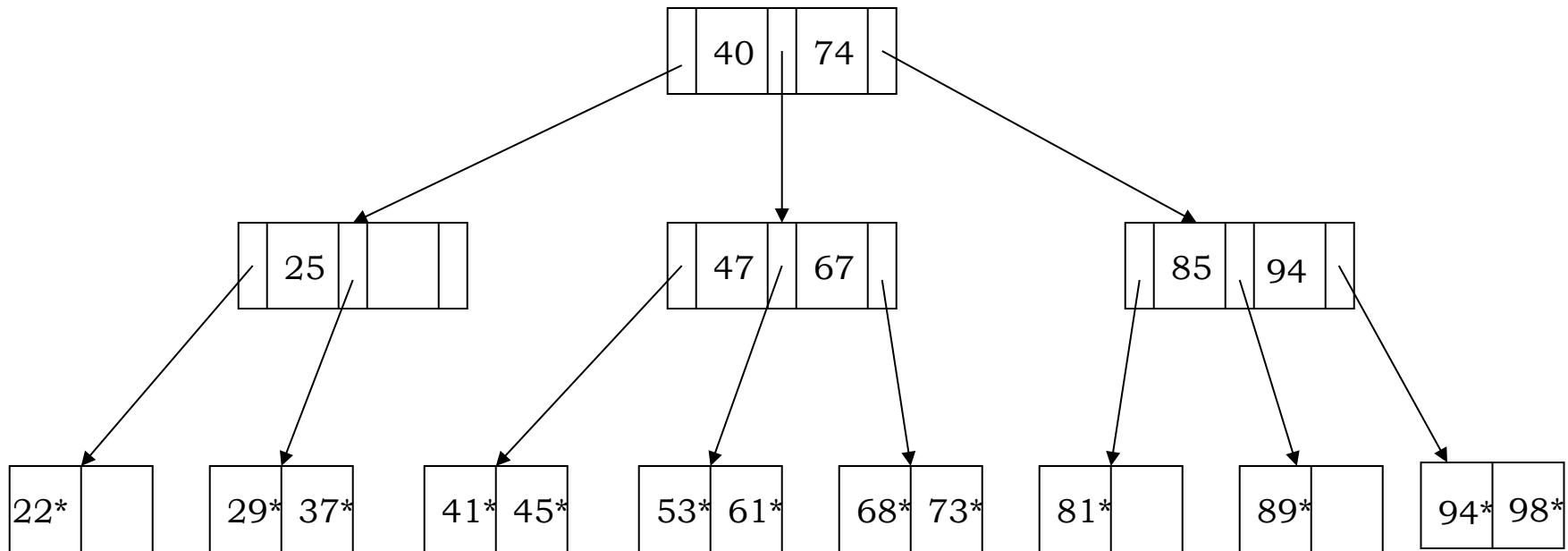
Show the tree that results from inserting a records with search key **98** followed by **96** (do **not** use redistribution).

2. (5 pts) Consider the extendible hash table to the left. Assume $\text{Hash}(x) = x$. Show the result of inserting the following keys in order: 24, 59



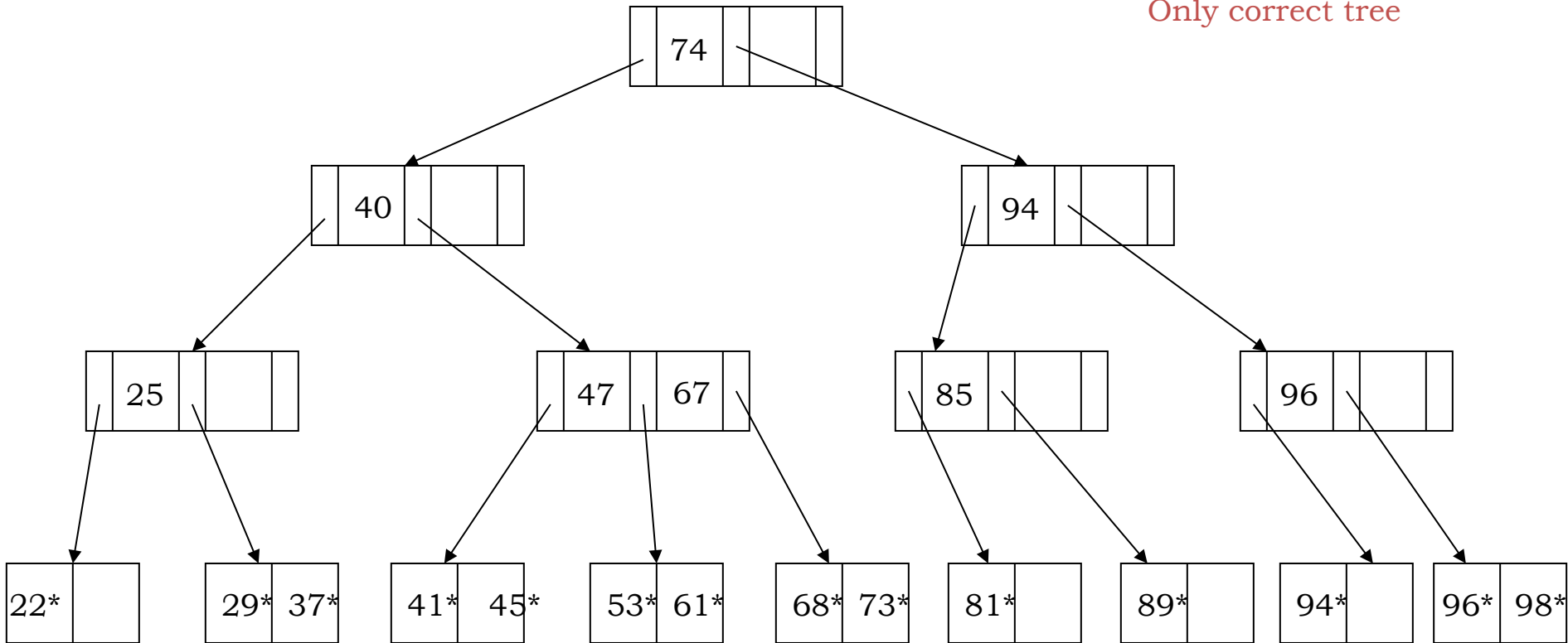
Answer here

1. (5 pts) Consider the B+ tree below. AFTER ADDING 98, and before adding 96



ANSWER for Question 1 (5 pts)

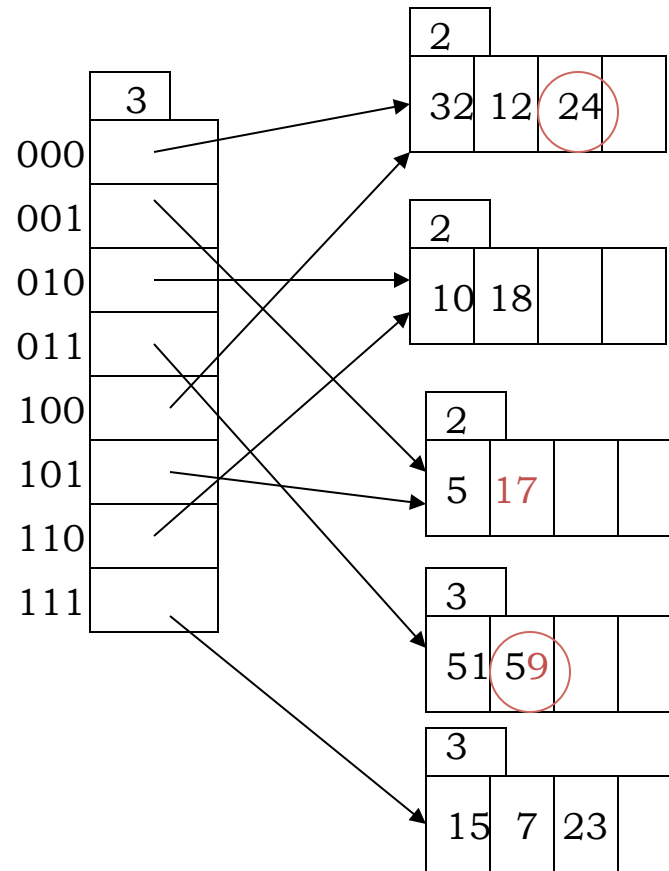
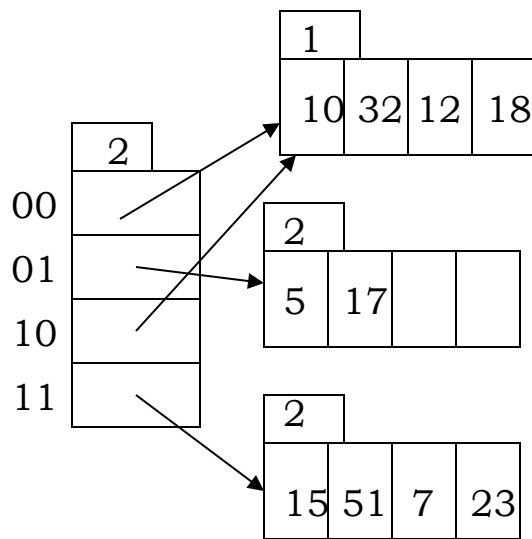
Only correct tree



-2 if 96 and/or 98 does not appear at leaf

-2 for any tree that isn't 4 levels. Use discretion on partial credit.

2. (5 pts) Consider the extendible hash table to the left. Assume $\text{Hash}(x) = x$. Show the result of inserting the following keys in order: 24, 59



-1 for each misplaced key (order within a bin not important), and -1 for wrong local or global depth; grader – just need check that bins contain the correct content; don't get hung up on checking pointers – mistakes there would probably be typos anyways