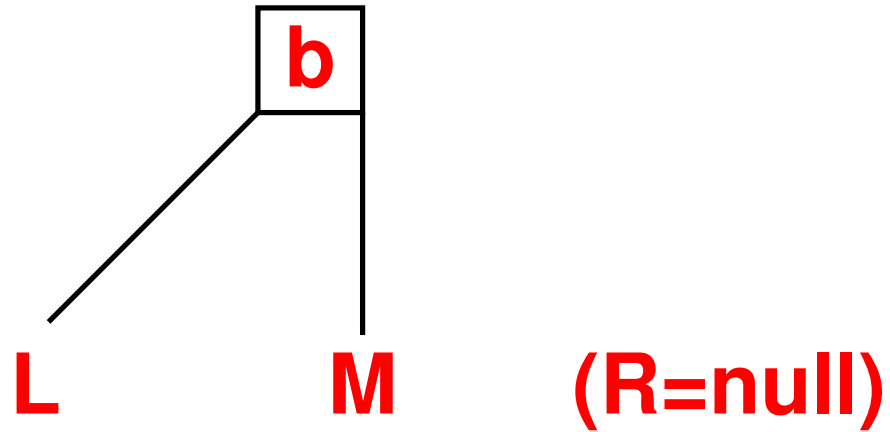
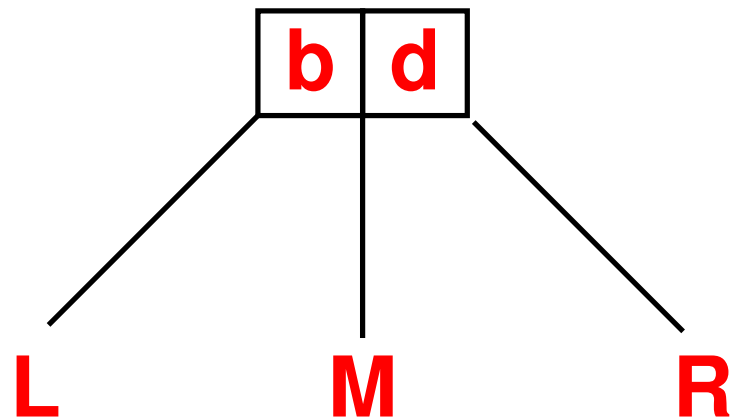


2-3 Trees: 2 types of nodes

1 data item:



2 data items:

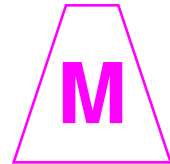
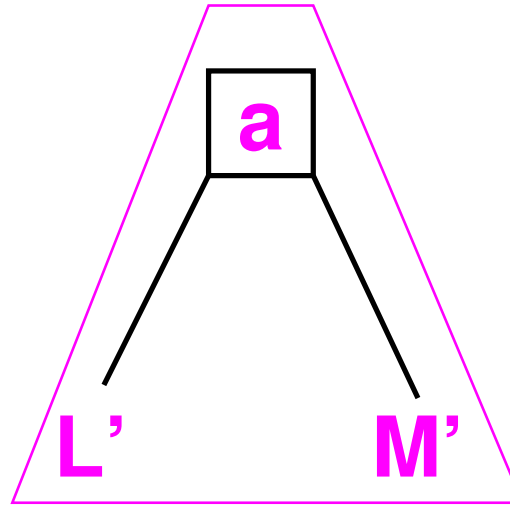


Leaf: **L=M=R=null**

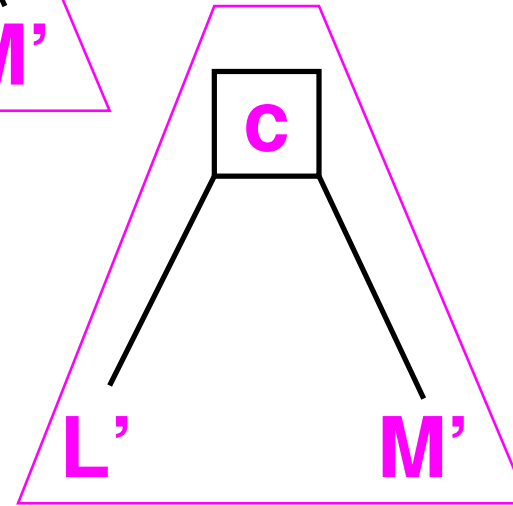
3 types of insertions



replaced by



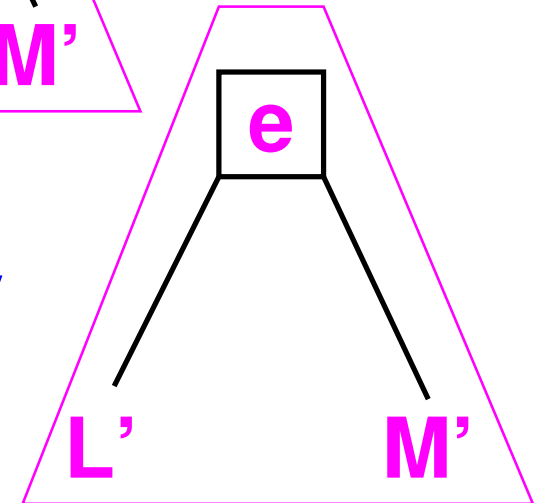
replaced by



if R not null:

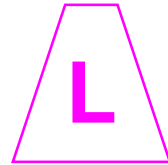


replaced by

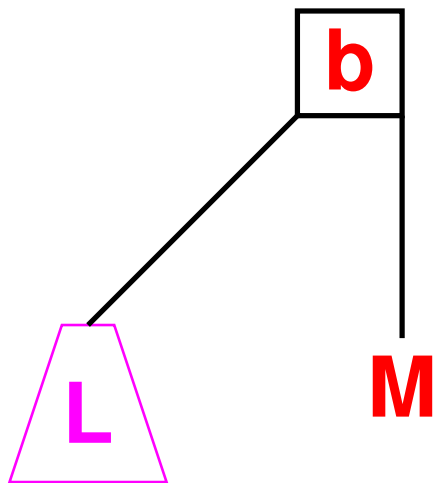
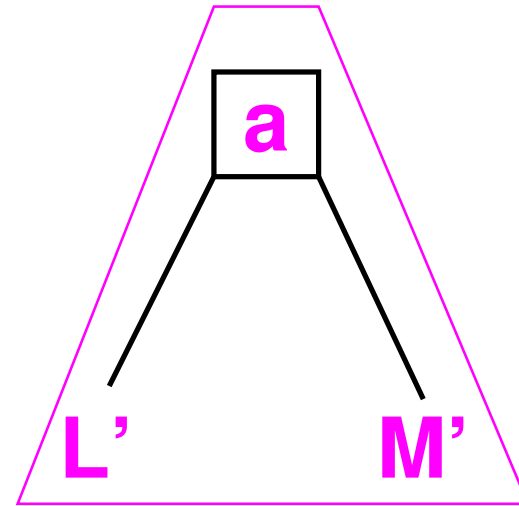


Insertion at leaf: $L'=M'=null$

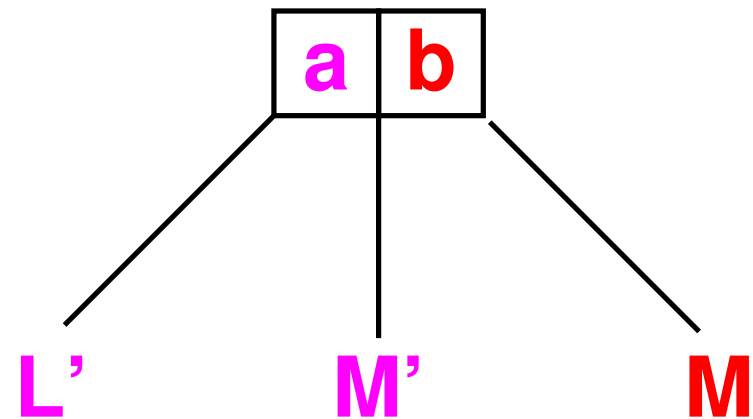
Insert at node with 1 data item



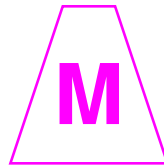
replaced by



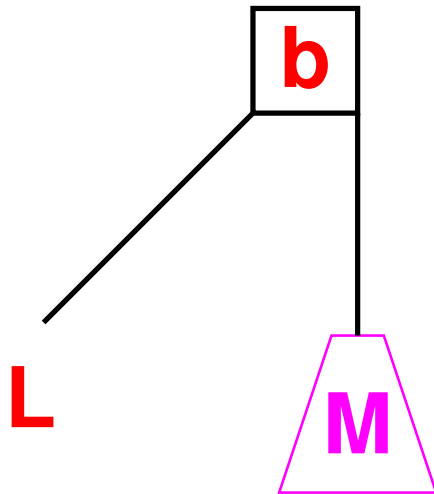
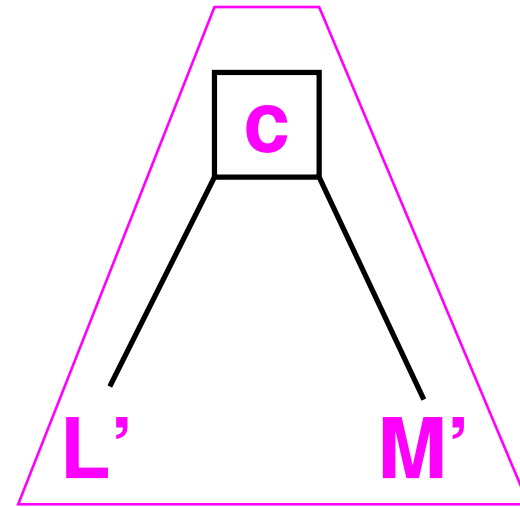
becomes



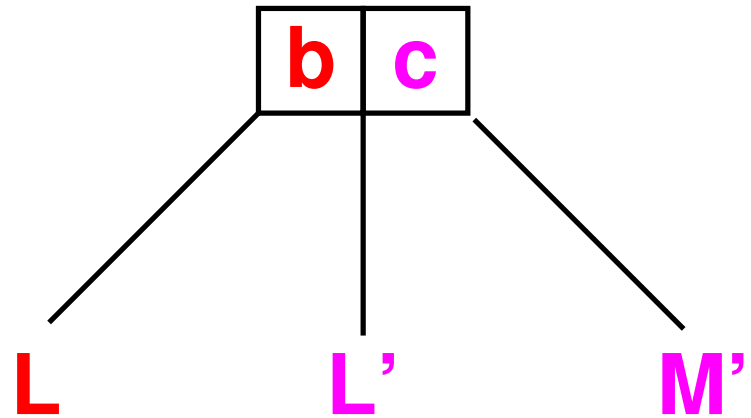
Insert at node with 1 data item



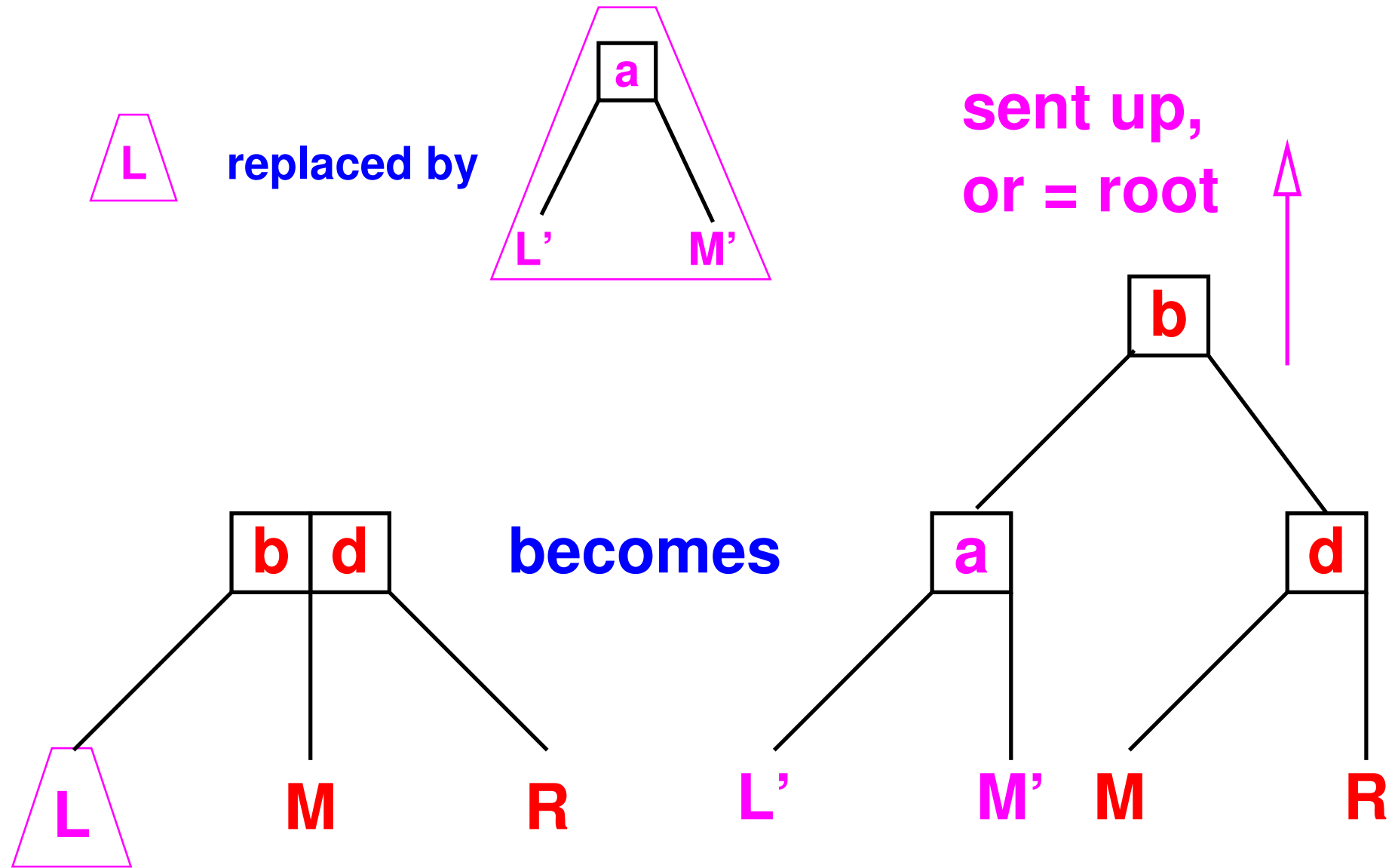
replaced by



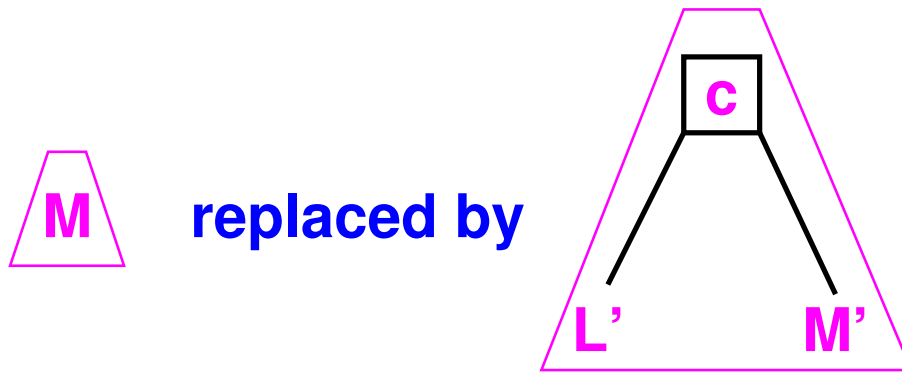
becomes



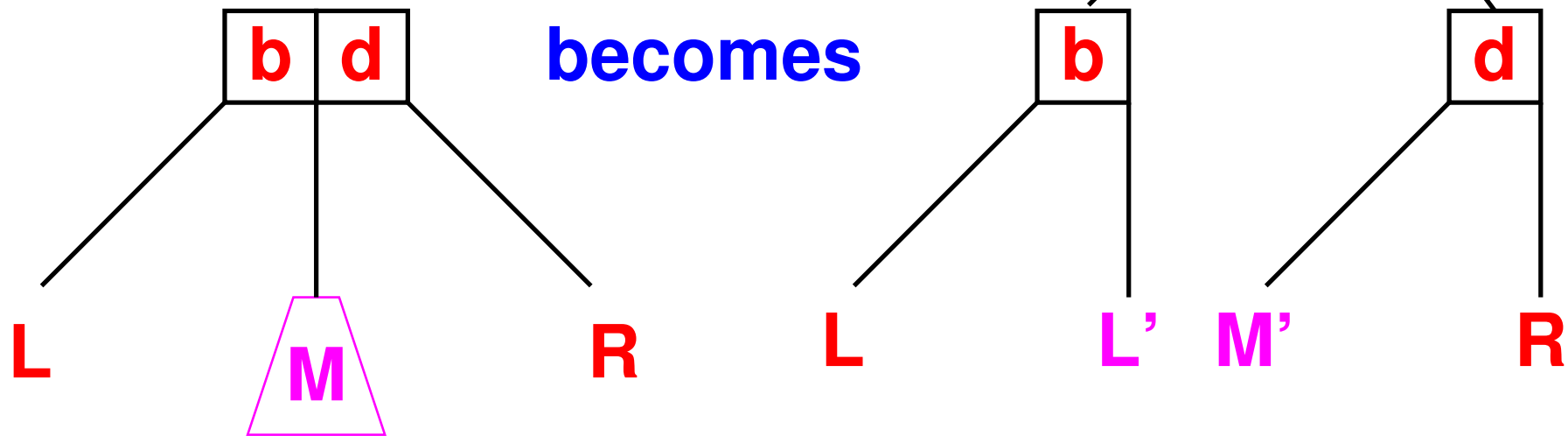
Insert at node with 2 data items



Insert at node with 2 data items



sent up,
or = root



Insert at node with 2 data items

