

Insert 3

3

Insert 21

3 21

Insert 9

3 9 21

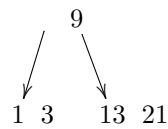
Insert 1

1 3 9 21

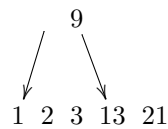
Insert 13

1 3 9 13 21

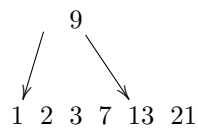
Adding 13 violates condition 5. Must promote and split



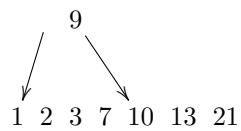
Insert 2



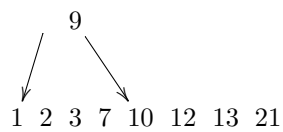
Insert 7



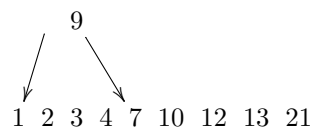
Insert 10



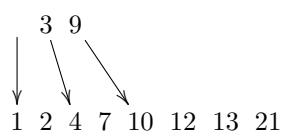
Insert 12



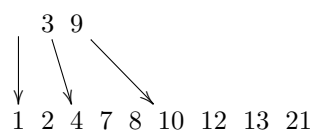
Insert 4



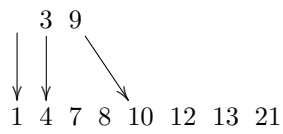
Adding 4 violates condition 5. Must promote and split



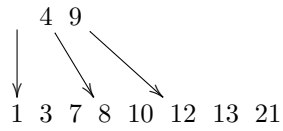
Insert 8



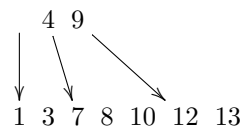
Delete 2



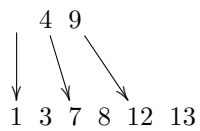
Violates rule $m/2$ children. Promote 4 and demote 3 to 1 array



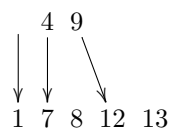
Delete 21



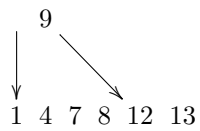
Delete 10



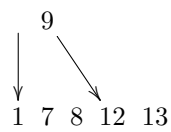
Delete 3



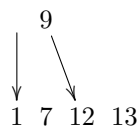
Violates rule $m/2$ children. Demote 4 to 1 then merge 1,4 with 7,8 because parent can only have one more child than itself



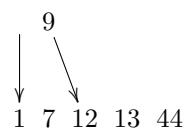
Delete 4



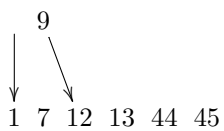
Delete 8



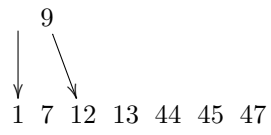
Insert 44



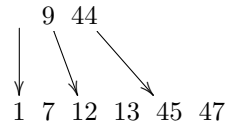
Insert 45



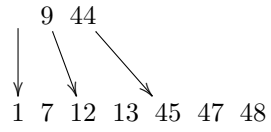
Insert 47



Violates condition 5. Promote 44 then split



Insert 48



Insert 49

