Red Black Tree deletion
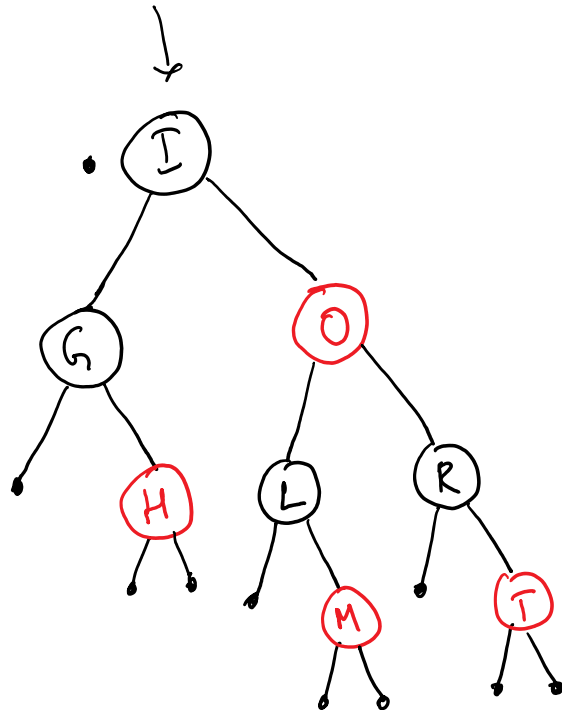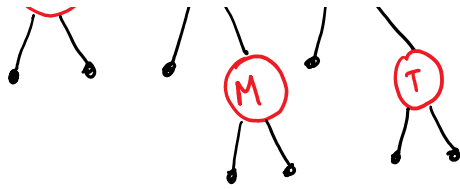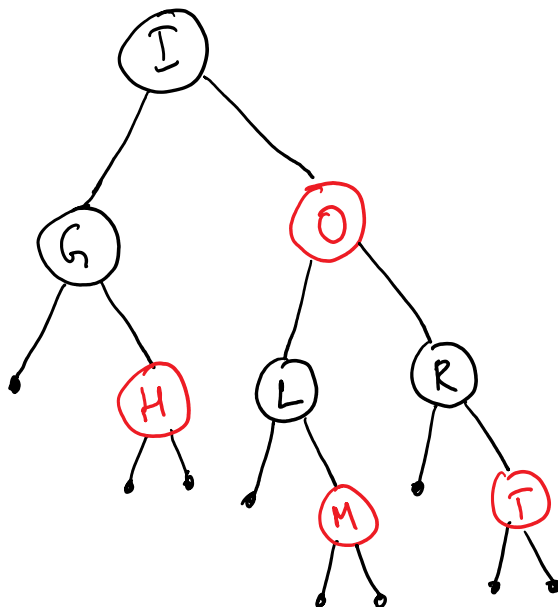
Delete A.

Case 2 : Sibling is black and has 2 black children
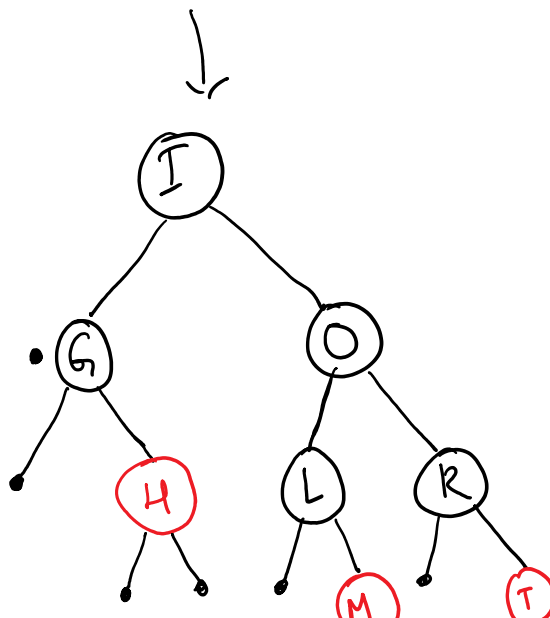
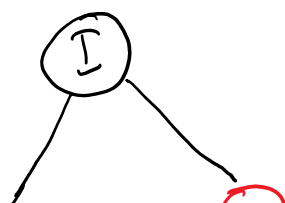Again in Case 2 : Sibling is black and has two black children.
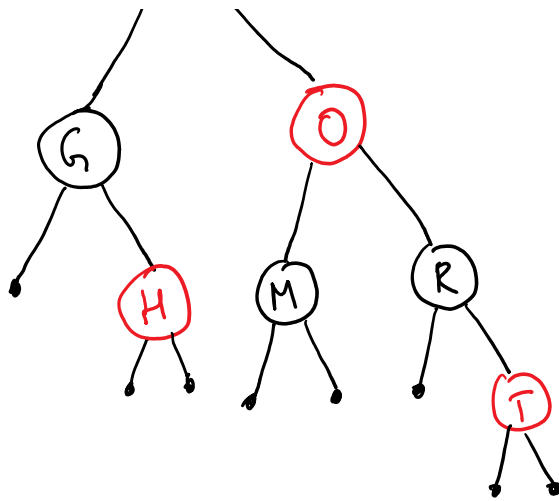
No Sibling. We can remove black token at root.

Delete L
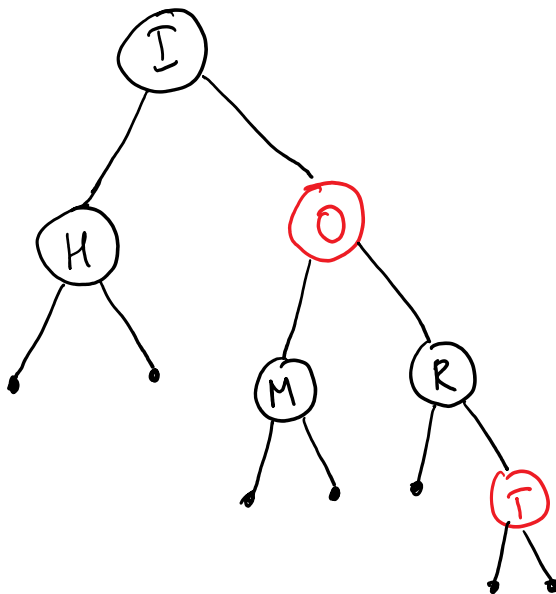
L is black but child M is red. So this is minor case.

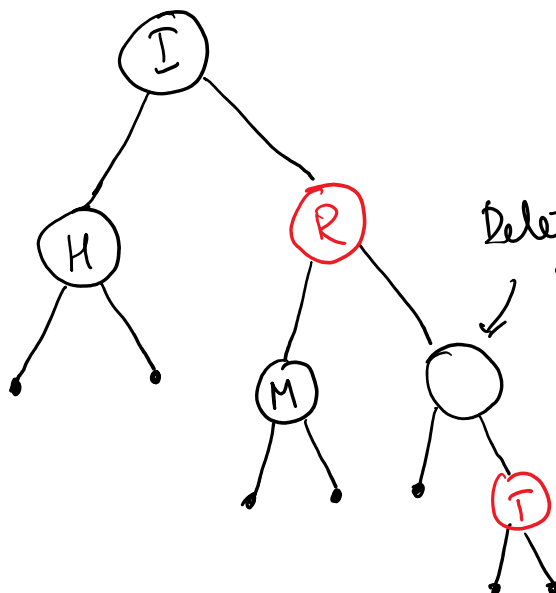**Delete G**

G is black but lone child

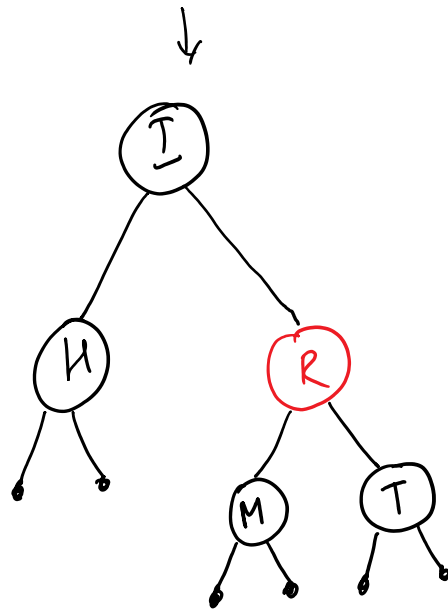G is black but lone child is red. Again, minor case.

Delete O

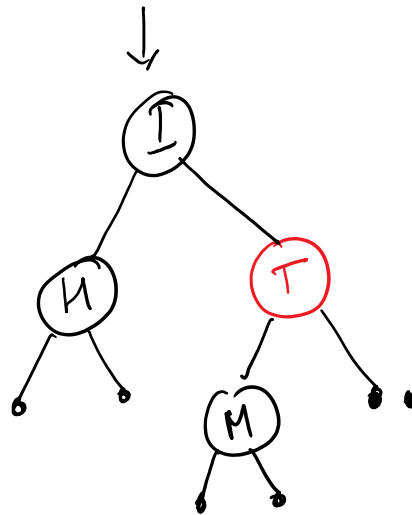Replace O by its successor R and delete the node containing R.

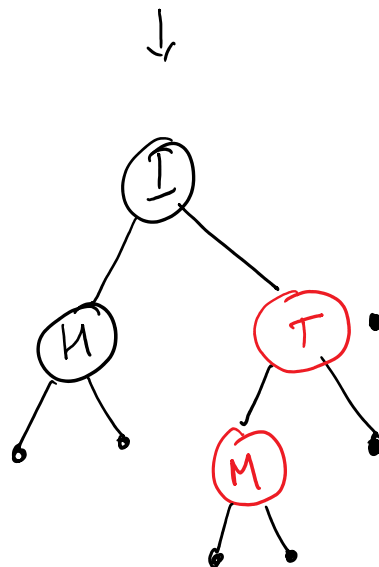Delete this node. → This is minor case.

Delete R

Replace R with its
successor T and delete
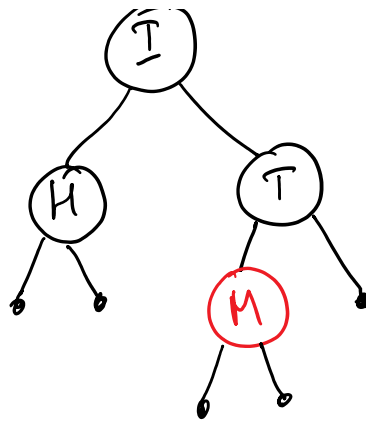node containing T.

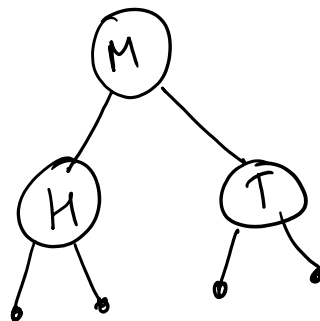## Case 2: Sibling (M) is
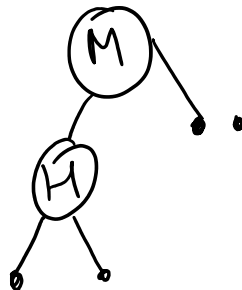black with two black
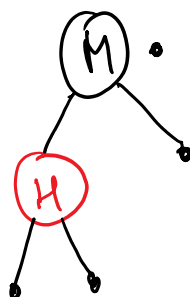children.

T absorbs the black
token

Delete I

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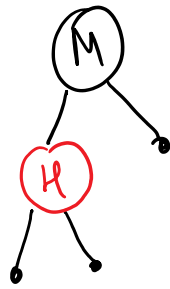Replace I with successor M, and delete node containing M. Trivial Case.

Delete T

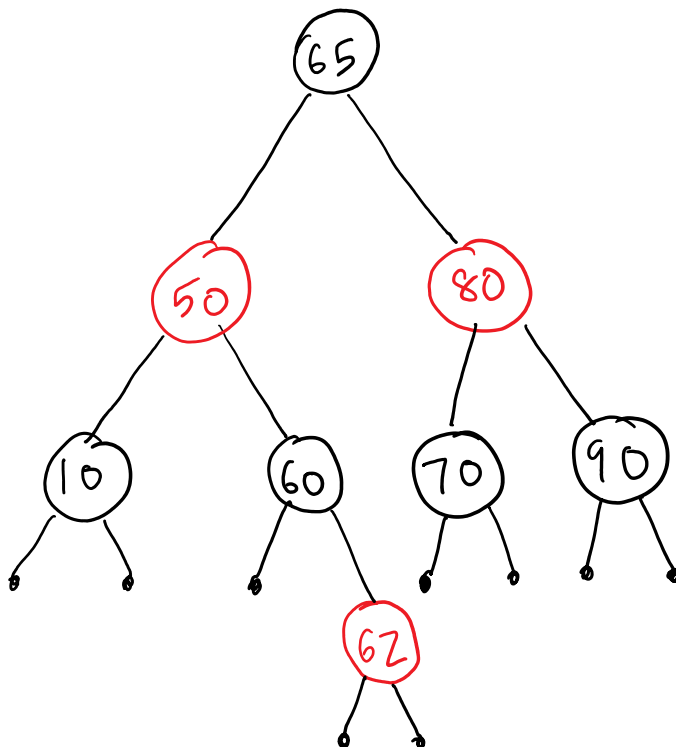Case 2: Sibling H and children black.

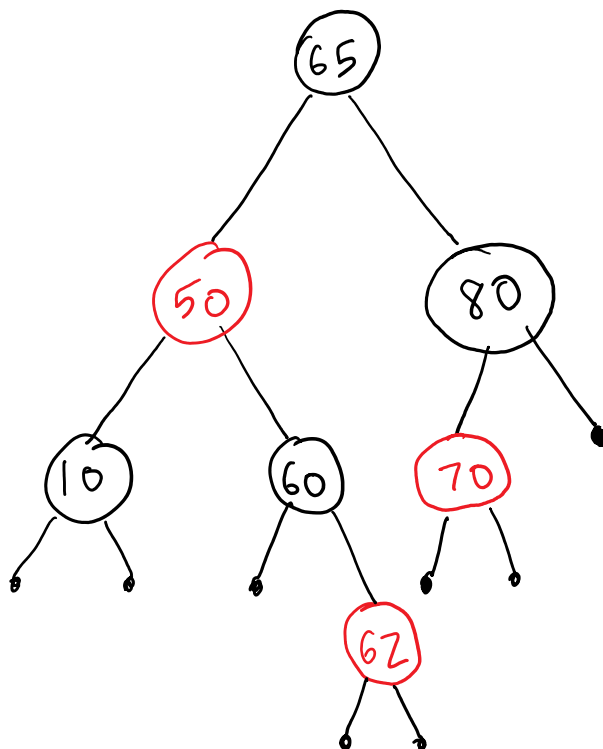Remove black token from root.

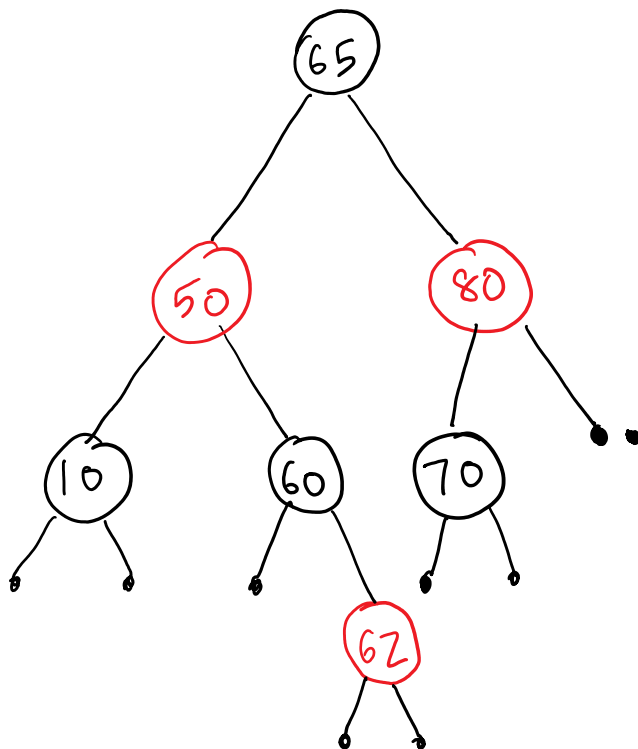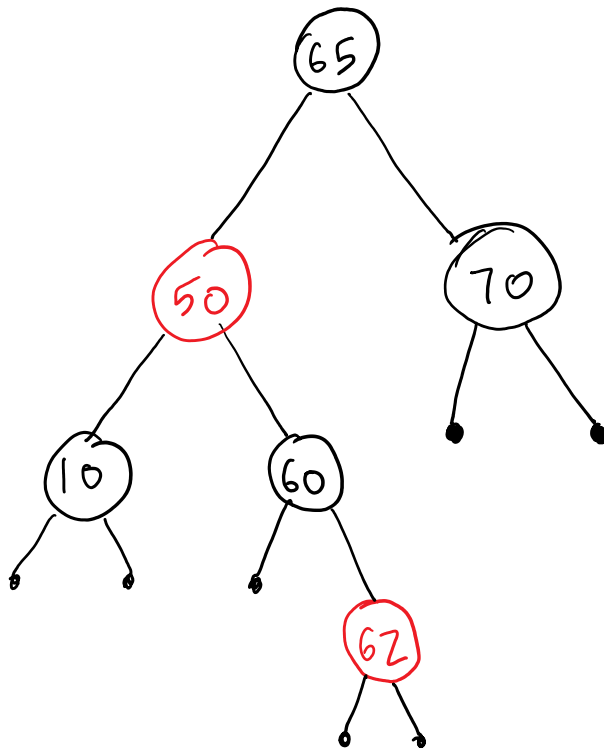Delete M

Delete M

Minor Case
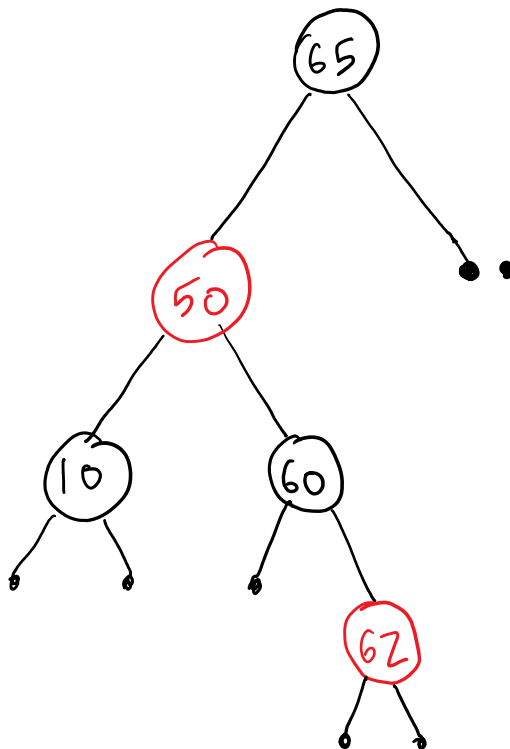
Delete 4

Delete 90

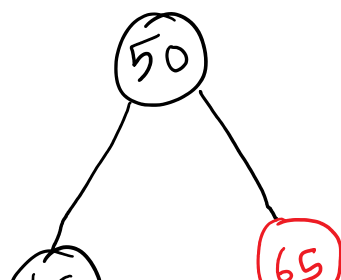Major Case : Case 2

Delete 80

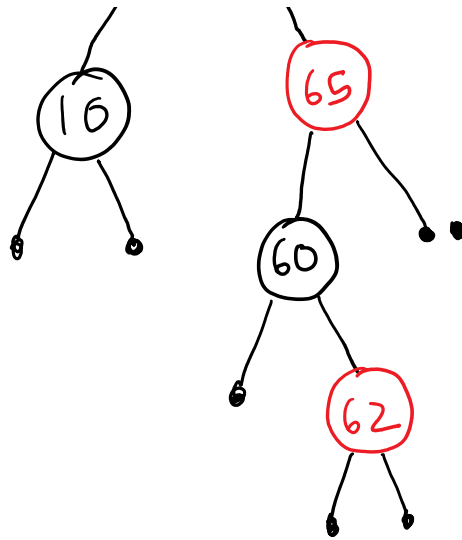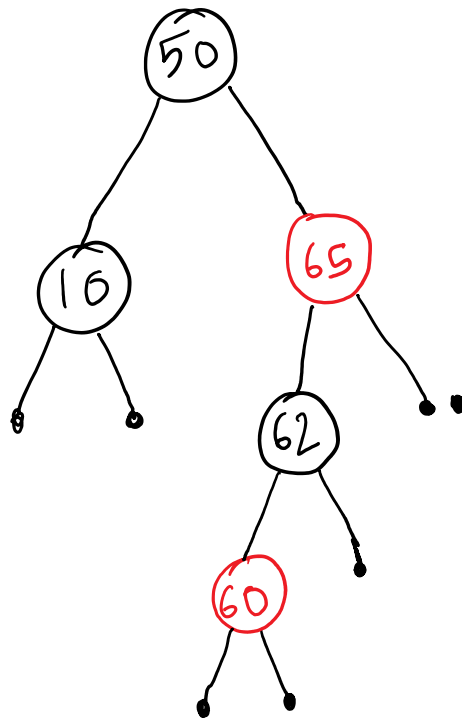Minor Case : Splice 70
in 80's place.

Delete 70

Case 1: Sibling is red.
Rotate at parent
and recolor

Now in Case 3
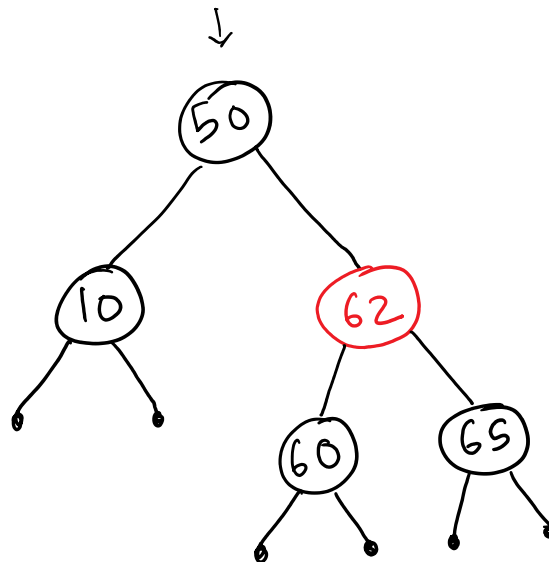(Mirror Image of Case 3).
So rotate at sibling
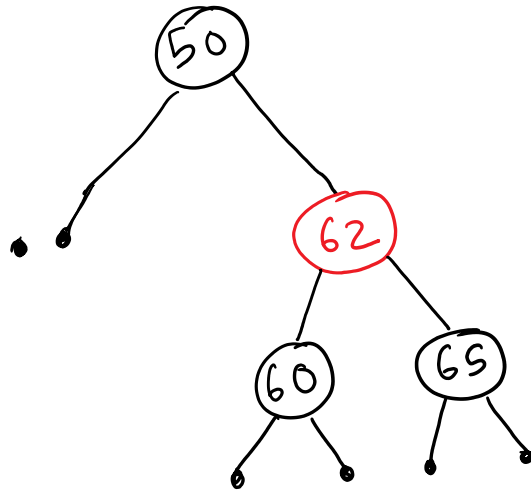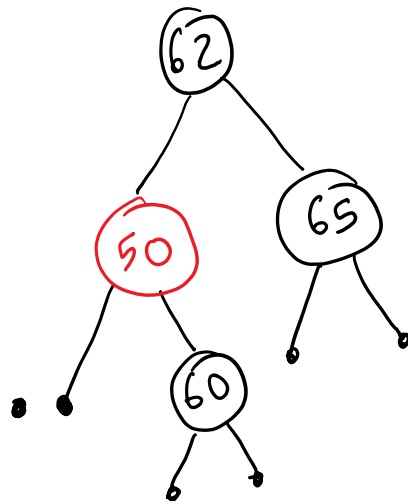
So rotate at sibling

Now in Case 4.

Recolor 60 to black.
62 gets parent's color
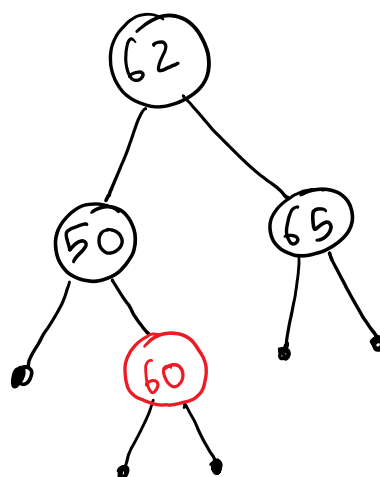Parent gets black color.
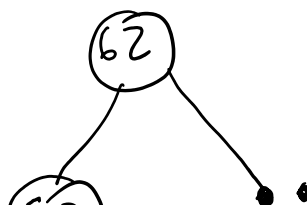Rotate right at parent.

Delete 10

Case 1

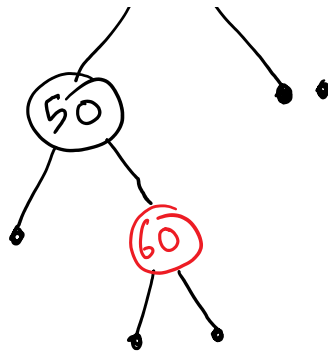Recolor sibling and parent. Left rotate about parent

Case 2

Push up blackness.
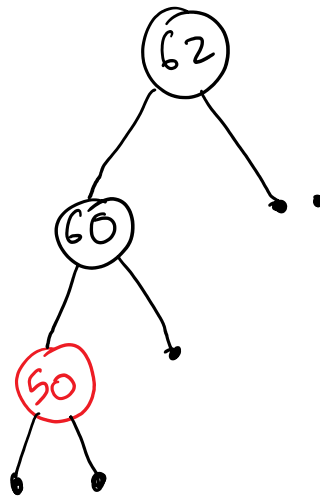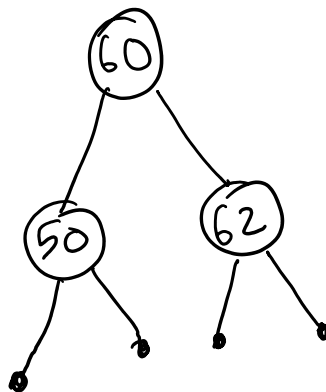
Delete 65

Case 3

Recolor 50 & 60.

Recolor 50 & 60 ·
Left rotate at 50

Case 4

Color 50 and parent black.

Sibling gets color of parent.

Rotate at parent.

Done !