Exercise 1 Simple training exercises

1. In the last exercise session, you found the red-black tree that results from sucessively inserting the keys 41, 38, 31, 12, 19, 8 into an intially empty tree. Now show the red-black trees that result from successive deletion of the keys in the order 8, 12, 19, 31, 38, 41. (CLRS 13.4-3)
2. Show that if node y in RB-DELETE is red, then no black-heights change.
3. A node x is inserted into a red-black tree with RB-INSERT and then is immediately deleted with $RB - Delete$. Is the resulting red-black tree always the same as the initial red-black tree? Justify your answer (for example with a minimal example). (CLRS 13.4-8)

Exercise 2 Programming Task 2

You can spent this time working on the second programming task and ask for help, if you want to!