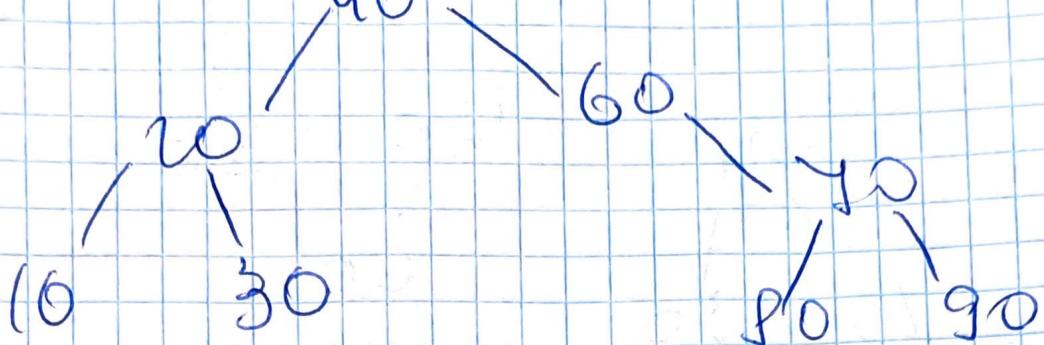
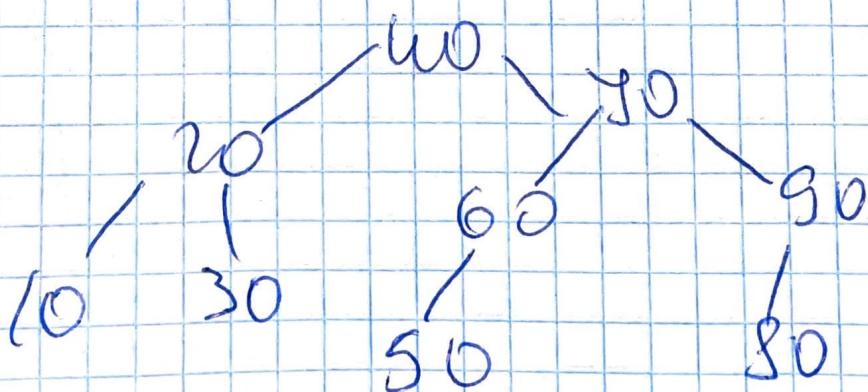
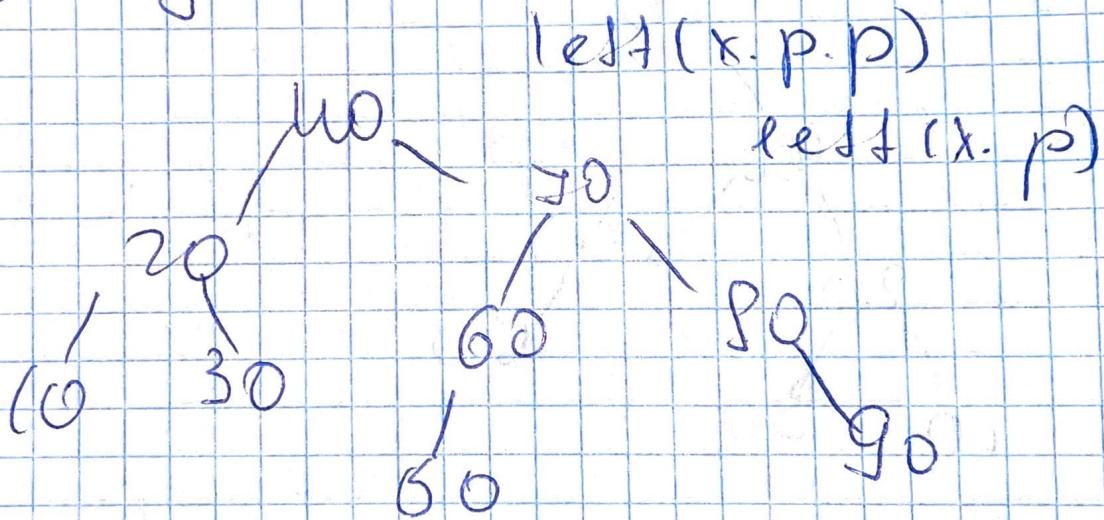


3agamie w/ 1



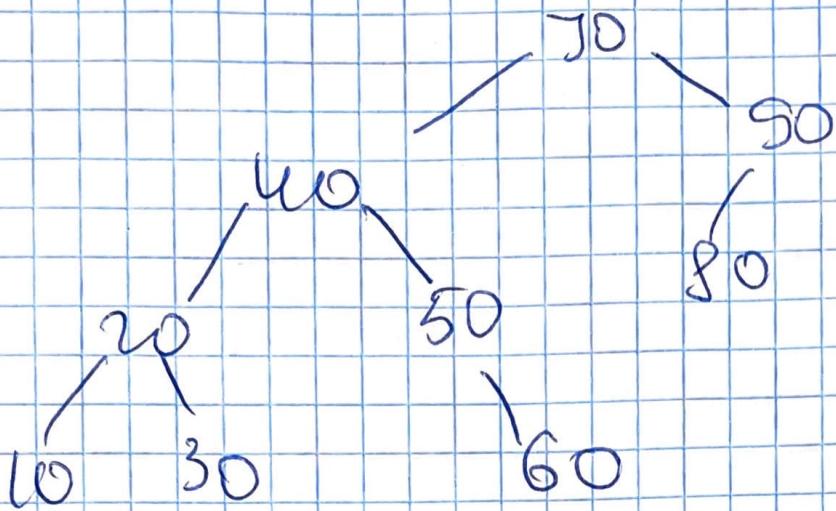
$x = x.\text{parent}.\text{right}$ and $x.p = x.$
 $\text{parent}.\text{parent}.\text{right}$

2ag - rep notation



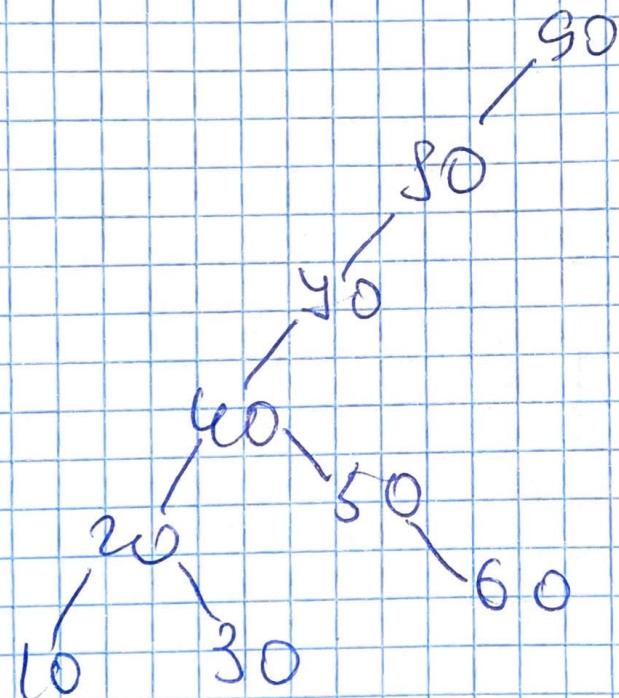
$x = x.\text{parent}.\text{right}$ and $xp = x.\text{parent}.\text{parent}.\text{right}$

rag - tag notation

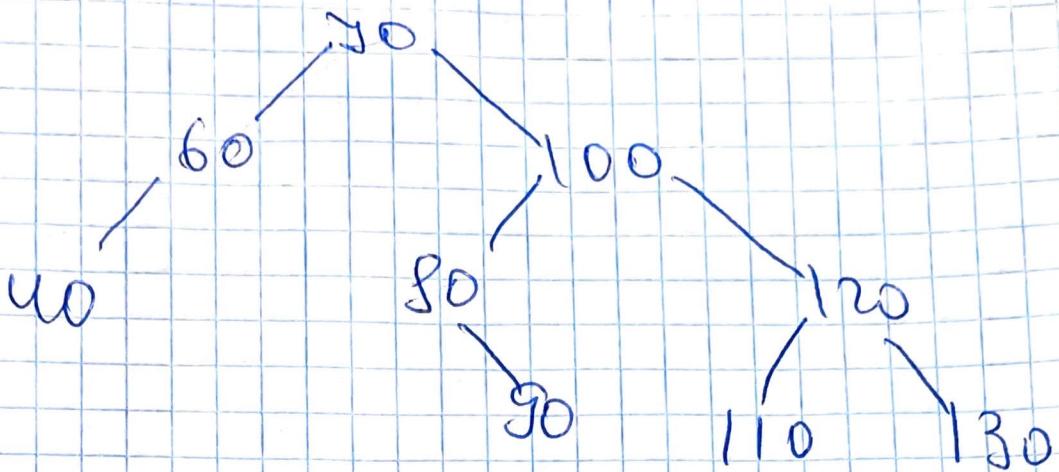


left($x.p.p$)

less($x.p$)



Balanced w/ 2

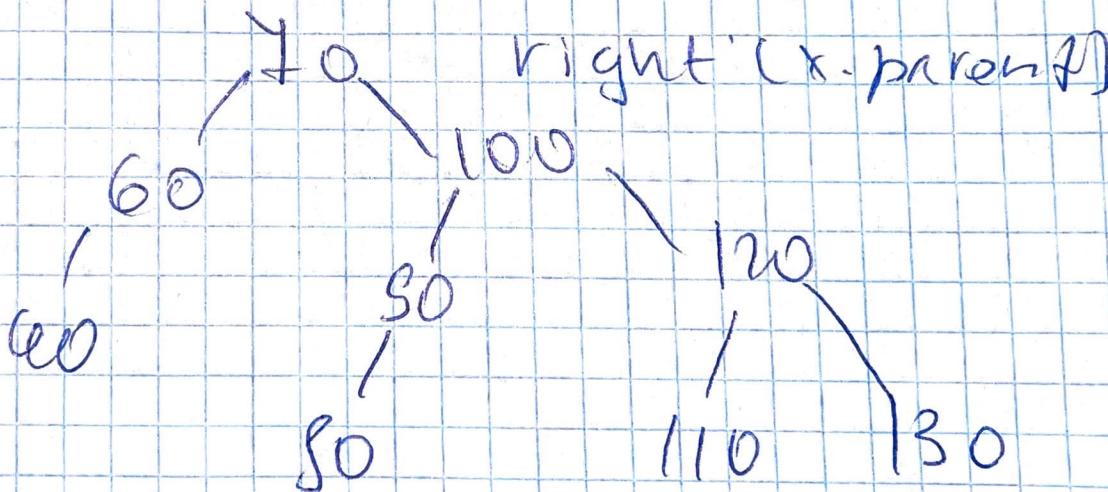


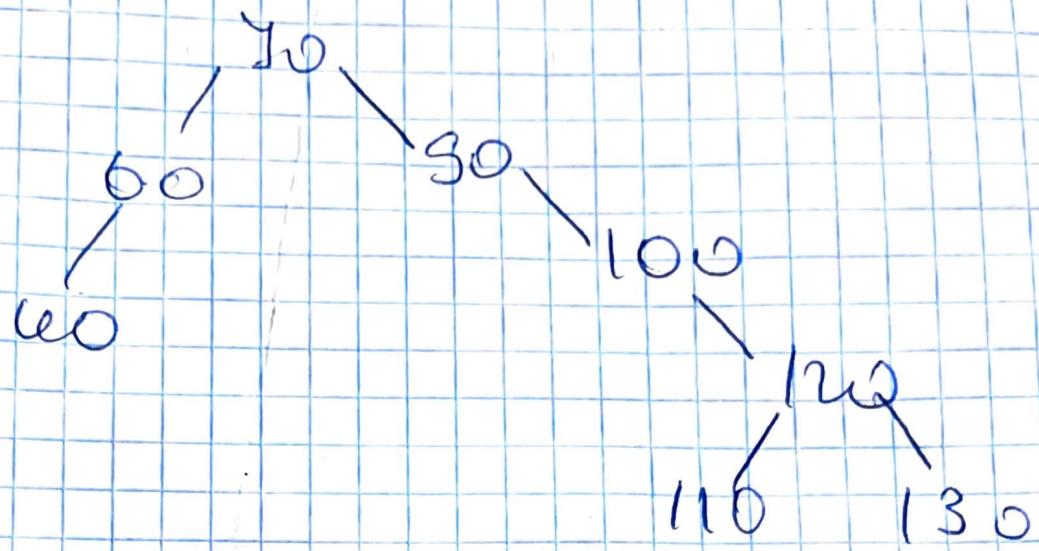
$x \geq x.\text{parent}.\text{right}$ and $x.p = x.\text{parent}.\text{parent}.\text{left}$

zig-zag rotation

left($x.\text{parent}$)

right($x.\text{parent}$)





$x = x.\text{parent}.\text{right}$ and $x.\text{parent}.\text{parent} = \text{null}$

right - notation

left($x.\text{parent}$)

