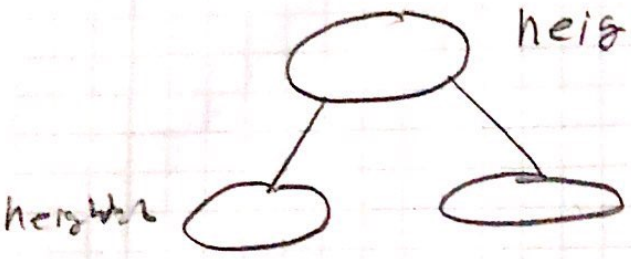
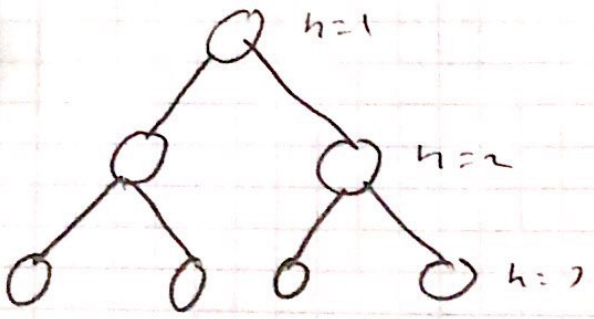
1-1

a-)

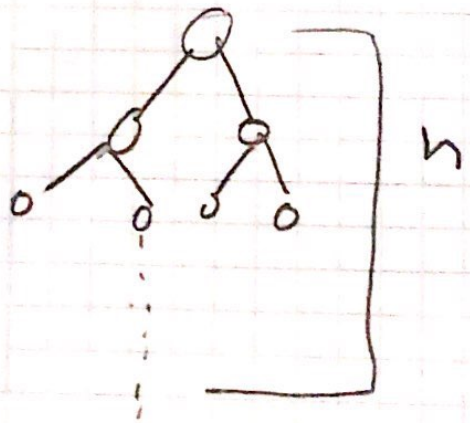


depth = 2x2 + 1 = 5

Set assume



3x4 + 2x2 + 1 = 17



total depth of height

$h \times 2^{h-1} + h-1 \times 2^{h-2} + \dots + 1$

b-)

Average number of Comparisons in BST = $\frac{\text{Total number of Comparisons}}{\text{Number of Nodes}}$

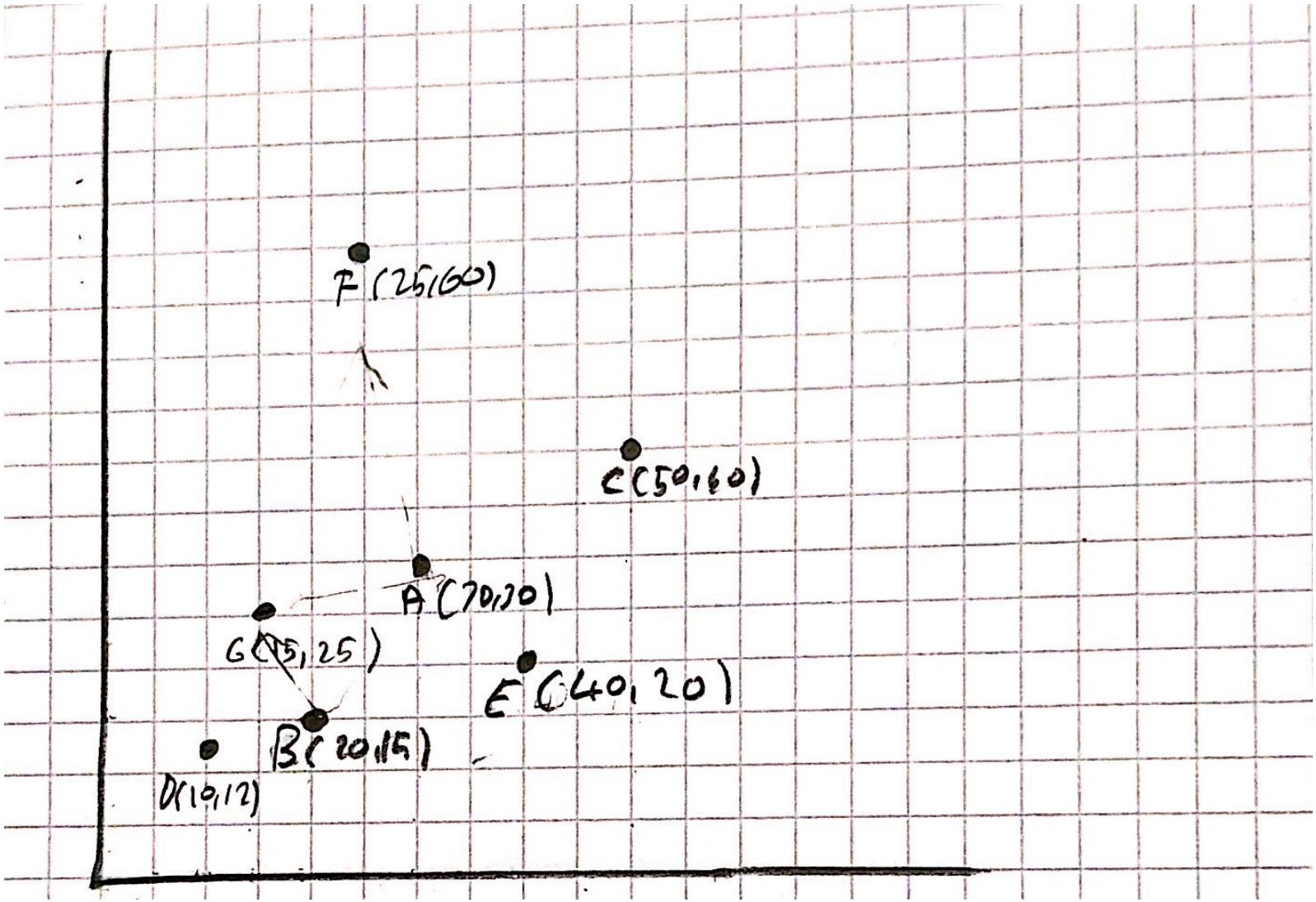
Total number of comparisons for a same value will total depth of node

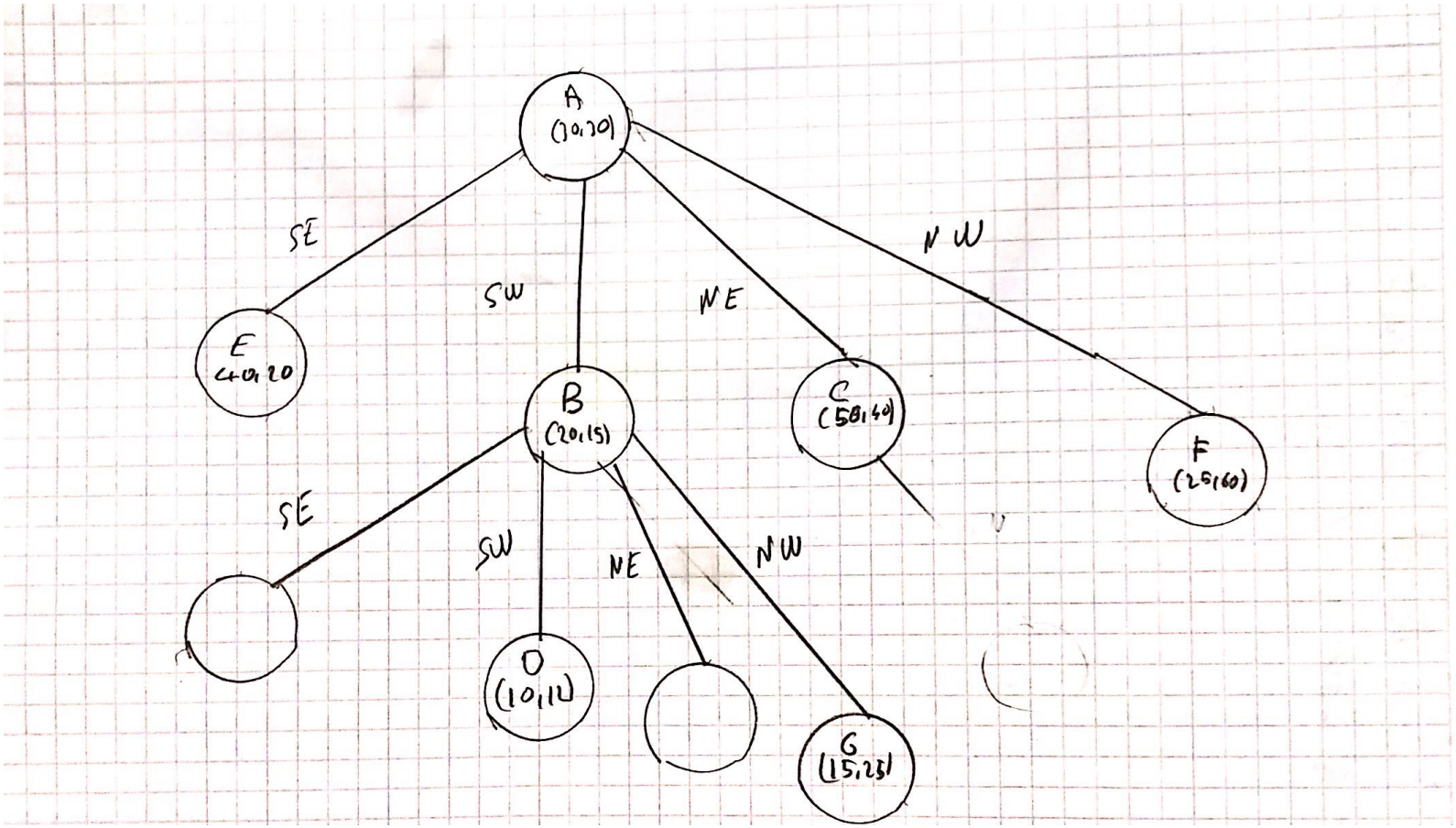
For height h: $n = 2^h - 1$

Total number of Comparisons $\Rightarrow a(h) = (h-1)\,2^h + 1$

Number of Node $\Rightarrow n = 2^h - 1$

c-) No, The number of internal nodes is $I = (N-1)/2$
The number of leaves is $L = (N+1)/2$





Subject :

Date :...../....

I deleted empty nodes