counting

Monday, August 23, 2021 12:04 PM

1. $\binom{3}{1}\binom{2}{1}\binom{24}{1} + 2\binom{3}{2}$

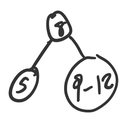
2. $\binom{5}{1}\binom{4}{1}\binom{5}{1}$

3. a) $\binom{9}{1}\binom{7}{1}\binom{5}{1} + \binom{9}{2}\binom{7}{0}\binom{5}{1} + \binom{9}{2}\binom{7}{1}\binom{5}{0} + \binom{9}{3}\binom{7}{0}\binom{5}{0}$

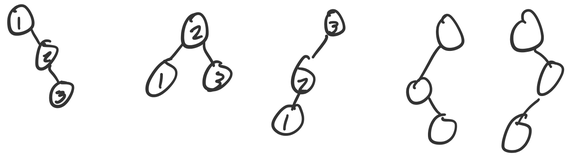
b) ...|.....1. $\binom{12}{2}$

4. (5,1,0,0) (4,2,0,0) (3,3,0,0)
(4,1,1,0) (3,2,1,0) (2,2,2,0) 8
(3,1,1,1) (2,3,1,1)

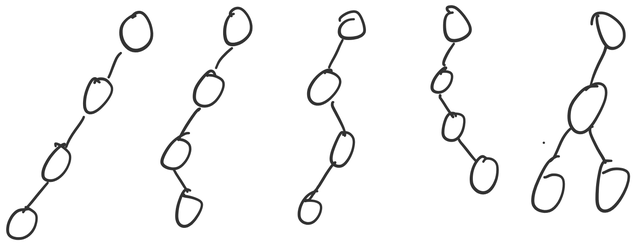
x2

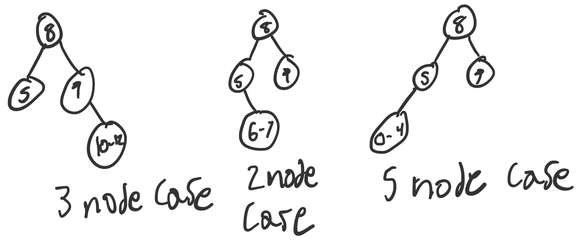
5. 

4 node case



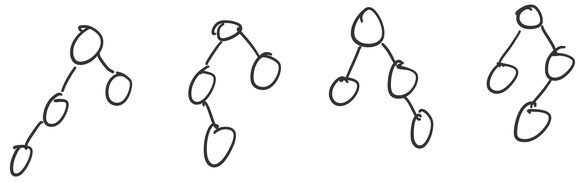
10 ways for 4 node tree



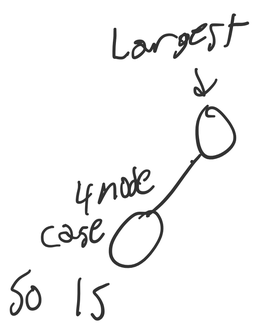


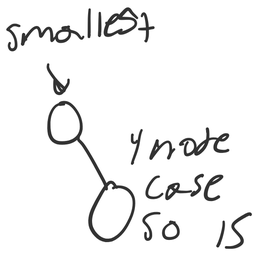
3 node case
2 node case
5 node case

2-node 3-node 4-node
2 5 14



$14(42)(5)(2) = 5,880$ 5 node





15+15+5+5+2+2=42 for 5-node