Answers

Some answers for introduction to algorithms.

Chapter 18

18.1-3 There are 5 legal B-trees. The root are 2, 3, 4, 2-3, 2-4 seperately, and the height is always 2.

18.1-4 For $h=0$, there is only 1 root with at most $2t-1$ nodes. For a B-tree with minimum degree t, the max count of children of one node is $2t-1$. The maximum number of nodes at height $h=i(1\le i< h$ is $n(i)=(2t-1)*(2t)^i$, and there are $(2t-1)(2t)^h$ leaves. The total count is $2t-1+\frac{2t((2t)^n)-1)}{2t-1}$.