5.4a Prove that a perfect *N*-ary tree of height *h* has N^h leaf nodes.

5.4b Simplify $\log_N(nN)$.

5.4c Is it easier to store a complete *N*-ary tree starting at index 0 or at index 1? Recall that for a complete binary tree, it was easier to start the index at 1.

5.4d Generate a trie for the words found in the nursery rhyme treating all characters as lower case.

> Peter Piper picked a peck of pickled peppers;
> A peck of pickled peppers Peter Piper picked;
> If Peter Piper picked a peck of pickled peppers,
> Where is the peck of pickled peppers Peter Piper picked?

5.4e Generate a trie for the words found in the nursery rhyme treating all characters as lower case.

> She sells seashells by the seashore.
> The shells she sells are surely seashells.
> So if she sells shells on the seashore,
> I am sure she sells seashore shells.

5.4f How does an *N*-ary tree differ from a general tree where each node can have at most *N* children?