Algorithm 1 BINARY-TREES

Input: n: max depth of binary trees;

1: m: min depth of binary trees $= 4$;
2: build a binary tree with a depth $n + 1$, and delete it;
3: build a long lived binary tree with a depth n;
4: **for** each $i \in [m, n]$ **do**
5: **for** each $i \in [1, 2^{(n-i+m)}]$ **do**
6: build a binary tree with a depth i, and delete it;
7: **end for**
8: **end for**
9: check the love lived tree exists, and delete it;