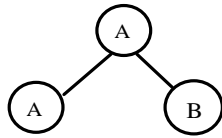
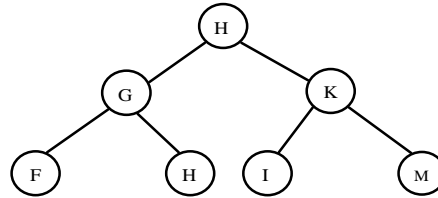


**8. Matching Trees**

**PROBLEM:** Given two binary trees, A and B, search Tree B for an occurrence of Tree A, i.e. by shape not by the contents of the nodes. Print all nodes in Tree B that are roots for a subtree whose shape is the same as Tree A. Our test is that if Tree A could be lifted and moved, its nodes would exactly fit over a subset(s) of nodes in Tree B.



TREE A



TREE B

In the example above, the shape of Tree A appears 3 times in Tree B. The occurrences start at nodes H, G and K.

**INPUT:** There will be 10 inputs. Each line will consist of 2 strings of letters. The first string will be used to construct Tree A. The second string will be used to construct Tree B.

**OUTPUT:** Print all nodes in Tree B that are roots for a subtree whose shape is the same as Tree A. If none, then print NONE. Note: multiple nodes may be printed in any order.

**SAMPLE INPUT**

1. AAB, HGFHKIM
2. AC, MPRHQ
3. PA, KHMCA

**SAMPLE OUTPUT**

1. H, G, K
2. M, P
3. K, H, C