Consider a programming language with nested function declarations that allows only first-order functions. That is, functions are not treated as values and can neither be passed as arguments nor returned by functions.

Lambda lifting and static links are two common methods of implementing such a language using a run-time stack. Describe these methods and discuss their advantages and disadvantages.

Now suppose we are dealing with a programming language that supports higher-order functions that can be passed as arguments and returned as results. Give an example, in ML-like pseudo-code, where the techniques that you have described in (a) can no longer be used. Justify your answer.

Carefully explain the techniques you might use to compile the example that you presented in (b).