(from Er) Consider the following simpler alternative to splaying:

MoveToRoot(v):
    while parent(v) != null
        single rotate at v

Prove that the amortized cost of MoveToRoot in an n-node binary tree can be Ω(n). That is, prove that for any integer k, there is a sequence of k MoveToRoot operations that require Ω(kn) time to execute.