(a) Let $\{w_1, w_2, w_3\} = \{1, 2, 1\}$, and $K = 2$. Then the greedy algorithm here will use three trucks, whereas there is a way to use just two.

(b) Let $W = \sum_i w_i$. Note that in *any* solution, each truck holds at most K units of weight, so W/K is a lower bound on the number of trucks needed.

Suppose the number of trucks used by our greedy algorithm is an odd number $m = 2q+1$. (The case when m is even is essentially the same, but a little easier.) Divide the trucks used into consecutive groups of two, for a total of $q+1$ groups. In each group but the last, the total weight of containers must be *strictly* greater than K (else, the second truck in the group would not have been started then) — thus, $W > qK$, and so $W/K > q$. It follows by our argument above that the optimum solution uses at least $q+1$ trucks, which is within a factor of 2 of $m = 2q+1$.