Given a linked list and an integer k, swap the two list items that are at distance k from the *beginning of the list* and distance k from the *end of the list*. Be sure to consider the case where the k cross, so that the item k from the beginning of the list is after the item k from the end of the list. For instance, given the list

$$(1\ 2\ 3\ 4\ 5\ 6\ 7)$$

and $k = 2$, you should return the list

$$(1\ 6\ 3\ 4\ 5\ 2\ 7)$$

, and likewise if $k = 6$. The solution must run in $O(n)$ time, where n is the length of the list.