1. $is\_sorted(l_1 \dots l_n) = \begin{cases} \emptyset, & \text{if } l = \emptyset \\ l_1, & \text{if } n = 1 \\ is\_sorted(l_2 \dots l_n), & l_1 < l_2 \\ false, & otherwise \end{cases}$

$remove\_duplicate(l_1 \dots l_n) = \begin{cases} \emptyset, & \text{if } l = \emptyset \\ l_1, & \text{if } n = 1 \\ remove\_duplicate(l_2 \dots l_n), & l_1 = l_2 \\ \{l_1\} \cup remove\_duplicate(l_2 \dots l_n), & l_1 \neq l_2 \end{cases}$

$sort\_sublist(l_1 \dots l_n) = \begin{cases} \emptyset, & \text{if } l = \emptyset \\ \{l_1\} \cup sort\_sublist(l_2 \dots l_n), & l_1 \text{ not list} \\ remove\_duplicate(l_1) \cup sort\_sublist(l_2 \dots l_n), & l_1 \text{ list} \end{cases}$