

Exercise 3:

1.

- (1) *pushback* (l, x) is just like *append* (l, x) we studied in class, which extend the sequence of the data structure by one new element;
- (2) *pushfront* (l, x) can be expressed as the *insert* ($l, 1, x$), which add the new element x at the front of the sequence;
- (3) *popback* (l) can be expressed as *get* (l, i) and *delete* (l, i), where i is the length of the sequence returned from *length* (l). It first gets the last element of the sequence, then deletes it;
- (4) *popfront* (l) can be expressed as *get* ($l, 1$) and *delete* ($l, 1$). It first gets the first element of the sequence, then deletes it;