Problem 1

Problem 2

Problem 3

Problem 4

```java
public LinkedList<Set<Integer>> powerSet(LinkedList<Integer>
inputList){
    LinkedList<Set<Integer>> resultSet = new LinkedList<>();
    Set<Integer> emptySet = new HashSet<>();
    resultSet.add(emptySet);
    while(!inputList.isEmpty()){
        Integer f = inputList.removeFirst();
        int size = resultSet.size();
        //Set<Integer> currentSet;
        for(int i = 0; i < size; i++){
            Set<Integer> union = new HashSet<>();
            Set<Integer> currentSet = resultSet.get(i);
            union.add(f);
            union.addAll(currentSet);
            resultSet.add(union);
        }
    }
    return resultSet;
}
```