

4

1A) (Define Total

```
(lambda (list n)
  (if (null? n) 0
      (+ length (car (n)) (Total (cdr n)))
      )
  )
)
```

1B)

(Define max

```
(lambda (list n)
  (if (null? n) 0
      (if (null? (cdr n)) length (car n)
          (if (> length (car n) (length (car (cdr n))))
              (max cons (car n) (cdr n)))
              (max (cdr n)
                    )
          )
      )
  )
)
```

2) Assuming Random(n) Removes The Member

```
(DEFINE SHUFFLE  
  (LAMBDA (LIST N)  
    (IF (NULL? N) N  
        (IF (NULL? (CDR N)) N  
            (CONS (Random(N))  
                  (SHUFFLE (CDR N))  
)))
```