;;Homework 1.21

(define subProduct

(lambda (a subLst)

(if (symbol? a)

(if (null? subLst)

'()

(cons

(cons a (list(car subLst))) (subProduct a (cdr subLst))))

(product a subLst))))

(define product

(lambda (lst subLst)

(if (null? lst)

'()

(append

(subProduct (car lst) subLst)

(product (cdr lst) subLst)))))

;;Question 1.22

(define filter-in

(lambda (pred lst)

(if (null? lst)

'()

(if (pred (car lst))

(cons (car lst) (filter-in pred (cdr lst)))

(filter-in pred (cdr lst))))))

;;Question 1.23

(define list-helper1

(lambda (pred lst)

(if (null? lst)

#f

(if(pred (car lst))

0

(+ 1 (list-helper pred (cdr lst)))))))