

## HW 5 - Induction and Recursion

**Sec 4.1**  $4(a,b,c,d,e,f)$ ,  $18(a,b,c,d,e,f)$

**Sec 4.3** 10, 38, 40

(i) Write a recursive function  $prod(m, n)$ , which takes two natural numbers  $m$  and  $n$ , where  $0 \leq m \leq n$  and returns their product.

(ii) Write a recursive function called  $flatten(list)$  which takes a list and removes nestings from that list. Here are examples:  
 $flatten(a) = a$  where  $a$  is an atom  
 $flatten((a b)) = (a b)$   
 $flatten(((a b) (c))) = (a b c)$