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fun null [] = true
  | null _ = false;

fun hd (x::xs) = x;

fun tl (x::xs) = xs;

fun prod L = if null L then 1 else (hd L) * (prod (tl L));

fun prod [] = 1
  | prod (x::xs) = x * prod xs;

fun length [] = 0
  | length (x::xs) = 1 + length xs;

local
  fun addlen (n, []) = n
    | addlen (n, x::xs) = addlen (n+1, xs)
in
  fun length l = addlen (0,l)
end;
```