```
fun append (xs,ys) =
    if xs=[]
    then ys
    else (hd xs)::append(tl xs,ys)

fun map (f,xs) =
    case xs of
        [] => []
      | x::xs' => (f x)::(map(f,xs'))

val a = map (increment, [4,8,12,16])
val b = map (hd, [[8,6],[7,5],[3,0,9]])
```

Programming Languages

Dan Grossman

More Nested Patterns

Style

- Nested patterns can lead to very elegant, concise code
  - Avoid nested case expressions if nested patterns are simpler and avoid unnecessary branches or let-expressions
    - Example: `unzip3` and `nondecreasing`
  - A common idiom is matching against a tuple of datatypes to compare them
    - Examples: `zip3` and `multsign`

- Wildcards are good style: use them instead of variables when you do not need the data
  - Examples: `len` and `multsign`