(define English2cow (lambda (L)
  (if (empty? L)
      empty
      (cons (quote moo) (English2cow (rest L))))))
(define double
  (lambda (L)
    (cond
      ((empty? L) empty)
      (#true
        (cons (car L) (cons (car L) (double (cdr L))))))))
(define parity
  (lambda (n)
    (cond
      ((zero? n) (quote even))
      ((equal? (parity (- n 1)) (quote even)) (quote odd))
      ((equal? (parity (- n 1)) (quote odd)) (quote even))))
my-even?

(define my-even?
  (lambda (n)
    (cond
      ((equal? n 0) #true)
      (#true (not (my-even? (- n 1)))))))
**Theorem:** For any numbers \( a \) and \( b \), if

\[
\begin{align*}
    f(0) &= a \\
    f(n) &= b + f(n-1) \text{ for } n > 0
\end{align*}
\]

Then \( f(n) = a + bn \).

**Proof:** by induction on \( n \).

Base case: \( n=0 \). In this case, we are given \( f(0) = a \) (Equation 1), which is what the theorem states in this case.

Induction step: Assume the theorem is true for \( n=k-1 \). That is, \( f(k-1) = a + b \cdot (k-1) \).

Using Equation 2,

\[
    f(k) = b + f(k-1)
\]

Substituting, we get

\[
    f(k) = a + b + b \cdot (k-1)
\]

Which implies

\[
    f(k) = a + bk
\]

This completes the induction step. QED