Exercise 2.89.

Define procedures that implement the term-list representation described above as appropriate for dense polynomials.

Answer.

We have been informed that term lists of dense polynomials are represented as lists of the coefficients, and the order of a term in this representation if the length of the sublist begin with that term's coefficient, decremented by 1. Further more, we may also aware that the representation between dense polynomial and sparse polynomial differs merely on the level of term lists, they share the same representation on the level of term. Hence, we only need to modify the selectors and constructors for term lists, rather than terms:

```
(define (adjoin-term term term-list)
  (if (=zero? (coeff term))
      term-list
      (cons (coeff term)
            term-list)))

(define (the-empty-termlist) '())
(define (first-term term-list)
  (list (- (length term-list) 1)
        (car term-list)))
(define (rest-terms term-list) (cdr term-list))
(define (empty-termlist? term-list) (null? term-list))

(define (make-term order coeff) (list order coeff))
(define (order term) (car term))
(define (coeff term) (cadr term))
```