

Addition

(+ 10 1) ; Expected output: 11

Subtraction

(- 2 3) ; Expected output: -1

Multiplication

(* 0 1) ; Expected output: 0

(* 2 3) ; Expected output: 6

Division

(/ 0 10) ; Expected output: 0

(/ 10 5) ; Expected output: 2

(/ 5 2) ; Expected output: 2

Nil?

(nil? ()) ; Expected output: True

(nil? (and 5 ())) ; Expected output: True

(nil? (or () 5)) ; Expected output: False

Number?

(number? 2) ; Expected output: True

(number? (+ 9 (* 2 45))) ; Expected output: True

(number? (1 2 3)) ; Expected output: False

Symbol?

(symbol? append) ; Expected output: True

(symbol? (append newlist 6)) ; Expected output: False

List

(list? newlist) ; Expected output: False (even though it evaluates to a list, it is a symbol)

(list? (1)) ; Expected output: True

(list? ()) ; Expected output: True (not an atom)

Define and Set

(define increment (a) (+ a 1)) ; function "increment" defined

(set num 2) ; num = 2

(increment num) ; Expected output: 3

(+ num (+ 3 6)) ; Expected output: 11

(set num (increment num)) ; num = 3

(+ num (+ 3 6)) ; Expected output: 12

Arithmetic Expression

(- 314 (* 10 (+ 15 (/ (* 5 9) 3)))) ; Expected output: 14

Define

(define myVar 42) ; Expected output: 42

Set

(set myVar 24) ; Expected output: 24

Number?

(number? 42) ; Expected output: True

Symbol?

(symbol? mySymbol) ; Expected output: True

Cons

(cons 1 (2 3)) ; Expected output: (1 2 3)

If

(if (= 2 2) true false) ; Expected output: true

Car

(car (1 2 3)) ; Expected output: 1

Cdr

(cdr (1 2 3)) ; Expected output: (2 3)

And

(and (= 2 2) (> 3 1)) ; Expected output: True

Or

(or (= 2 3) (> 3 1)) ; Expected output: True

Not

(not (= 2 3)) ; Expected output: True

List

(list 1 2 3) ; Expected output: (1 2 3) ;ERROR

Nil?

(nil? ()) ; Expected output: True