# CSC104 Quiz #8

**Name:**

Assume that DrRacket has been started up in the `Intermediate Student with lambda` language, and that the following commands have been run. The command `(cons? L)` returns true if L is a list, false otherwise. The contract `; np : list/number -> number` says that the function np consumes a number or a list, and produces a number.

```
; np : list/number -> number
(define (np L)
  (cond
    [(cons? L) (apply * (map np L))]
    [else L]))

(define L1 3)

(define L2 (list 1 2 3))

(define L3 (list (list 1 2) 3 (list 4 5)))
```

For full marks, describe or draw what is produced by the following commands.

```
(np L1) ; in the definition of np, replace L by the value of L1, that is 3
```

```
(np L2) ; in the definition of np, replace L by the value of L2, that is (list 1 2 3)
        ; use what you know about (np L1)
```

```
(np L3) ; in the definition of np, replace L by the value of L3,
        ; that is (list (list 1 2) 3 (list 4 5))
        ; use what you know about (np L1) and (np L2)
```