

Quiz 2 prolog Skills: uses unification with recursion, uses unification in lists.

Name _____

Student Number _____

Evaluate the following expressions. (40 pts)

For

`p([L|Q], Q, L).`

`?- p([a, b, c, d, e], Y, X).`

What would X and Y unify to?

X =

Y =

The following functions add from **0 ... to n** including **n** $f(5) = 1 + 2 + 3 + 4 + 5 = 15$ in scheme. Write a rule or rules in prolog that can do the same. (Head 40 pts , Tail 60 pts)

```
;;Tail
(define (sumT n)
  (sumT-iter 0 n))

(define (sumT-iter a count)
  (if (= count 0)
      a
      (sumT-iter (+ a count) (- count 1))))
```

Examples of calls are:

```
> (sumT 0 2)
3
> (sumT 0 5)
15
```

Prolog rules

Examples of calls are:

```
factT(5,0,R).
  R = 15
factT(3,0,R).
  R = 6
factH(5,R).
  R = 15
factH(3,R).
  R = 6
```