csc324 Quiz #3 Monday 18 October 1999

Duration: 15 minutes

Aids allowed: None

Family Name: ____________________ **Lecturer:** Diane Horton

First Name: ____________________ **Tutor:** ____________________

Student #: ____________________

Grade: __________

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1. Assume that the following functions have been defined:

```
; Provides a nicer way to express a cond.
(defun my-if (test then else)
    (cond (test (eval then))
          (t    (eval else))
    )
)

; Returns the cdr of the shorter list.
(defun attempt1 (list1 list2)
    (my-if (< (length list1) (length list2))
          `(cdr list1)
          `(cdr list2)
    )
)

; Returns the cdr of the shorter list.
(defun attempt2 (list1 list2)
    (my-if (< (length list1) (length list2))
           (cdr list1)
           (cdr list2)
    )
)
```

Something is wrong with one or all of these functions.

(a) Would the expression `(attempt1 `(A B C D) `(X Y Z))` cause an error? Circle "yes" or "no". If yes, describe the error; if no, give the value of the expression.

$\boxed{\text{yes,}}$ and the error is: `list1 and list1 have no meaning inside my-if.`

no, and the value is:

(b) Would the expression `(attempt2 `(A B C D) `(X Y Z))` cause an error? Circle "yes" or "no". If yes, describe the error; if no, give the value of the expression.

$\boxed{\text{yes,}}$ and the error is: `eval tries to treat Y as a function.`

no, and the value is:

2(a) Write a Lisp function called `silly` that always returns, literally, `(car `(P Q R))`. Not the value of `(car `(P Q R))`, but `(car `(P Q R))` itself.

```
(defun silly ()
     (list 'car (list 'quote (list 'P 'Q 'R)))
)
```

(b) Write a single line that calls `silly` and then evaluate what it returns, thus producing the value `A`.

```
(eval (silly))
```