SENG2200/6220 –Programming Languages & Paradigms
Self-Quiz for Week 10, Semester 1, 2020

True/False Questions.

1. Pure function-oriented programming languages do not have the concept of variables.
   True.

2. In Scheme, we can create a nested list.
   True.

3. The following codes both output (+ 1 2).
   ```
   a. '( + 1 2 )
   b. `( ,(+ 1 2) )
   ```
   False.
   ```
   a. '( + 1 2 ) = ( + 1 2 )
   b. `( ,(+ 1 2) ) = ( 3 )
   ```

4. The list (1 2 3) can be considered as (1 . (2 . (3))).
   False. It should be viewed as (1 . (2 . (3 . ())))

5. (eq? (list 1) (list 1)) will output #t.
   False. The output will be #f, because eq? cannot compare lists.

Short-Answer Questions

6. Write a max function to find the maximum number of the two numbers.

```
(define (max a b)

   (cond

      ( (> a b) a )

      (else b)

   )

)
```

7. What is the result of the function below?

```
( letrec (

   ( A ( lambda (x)

      ( if (> x 0) ( B (- x 1) ) 0 ) ) )

   ( B ( lambda (y)

      ( if (> y 0) ( A (- y 1) ) 1 ) ) )
```

```
    ) `( ,( A 3 ) , ( B 3 ) )
)
```

(1 0)