CS 270 Assignment 1 (Introduction to Racket)

Due Wed Oct. 11 at 9am. No late assignments will be accepted.

Name 1:_____

Drexel Username 1:_____

Instructions: This assignment is to be done using DrRacket and is submitted in BBLearn.

Download, from the course website or piazza, the file assign1.rkt. This file is to be loaded into DrRacket and will be modified as you work on your solution. Rename the file assign1sol.rkt. When you are done you will submit the file assign1sol.rkt, which contains your solution, along with the file readme.txt, which should contain a brief summary of your solution along and any difficulties you encountered. Please indicate any questions you did not complete and roughly how long it took you to complete this part of the assignment.

Note that there are 13 questions in this part of the assignment – a description of the questions is included in the file assign1.rkt. Note that questions have you complete Racket function definitions and/or Racket unit tests. Make sure you do not change the name of these functions or unit tests. Initially the functions and unit tests are commented out [placed in a comment block beginning with #| and ending with |#], so that you do not get errors when you load the file into Racket. As you work on a question, you should uncomment the initial definition in the comment block. Additional comments for definition specifications use the one line comment notation indicated by a semi-colon. As you make changes, be sure to save your changes.

For example, you will encounter comment blocks like the following

;Question 0. Fill in the ... in the definition of sqr to implement
;a function that squares its input. Uncomment the corresponding unit test to test
;your implementation.

```
#|
;A function to square a number
; input:  x a number.
; output:  (number? (sqr x)) – a number equal to the square of x.
(define (sqr x)
  ... )
```

```
(define-test-suite testsqr
  (check-equal?
   (sqr 1) 1)
  (check-equal?
   (sqr 2) 4)
  (check-equal?
   (sqr 3) 9)
)

(print "Question 0:  Testing sqr")
(newline)
(run-tests testsqr 'verbose)
|#
```

You should remove the #| before the function definition and the |# after the command to run the unit test. After removing the comment block surrounding the question, you should replace "…" in the definition by your implementation. E.G.

```
(define (sqr x)
  (* x x))
```

After doing so, save your changes and click the Run button in DrRacket, you should see the following summary of the unit test in DrRacket's interaction window.

```
"Question 0:  Testing sqr"
3 success(es) 0 failure(s) 0 error(s) 3 test(s) run
0
```