The George Washington University  
School of Engineering and Applied Science  
Department of Computer Science  
CSci 169 – Software Paradigms – Fall 2009  
Homework #3  

Due Date: Monday, November 23, 2009  
Instructor: A. Bellaachia

Problem 1: (20 points)  
Do problem 2 on page 330 of your textbook.

Problem 2: (20 points)  
Do problem 3 on page 330 of your textbook.

Problem 3: (20 points)  
Do problem 4 on page 369 of your textbook.

Problem 4: (20 points)  
Write a scheme function that returns the union of two simple list parameters that represent sets.

Problem 5: (20 points)  
What does the following scheme function do? Explain.

```
(define (mystery toto)
  (cond ((null? toto) 0)
        ((not (list? (car toto)))
         (cond ((eq? (car toto) '') (mystery (cdr toto)))
               (else (+ 1 (mystery (cdr toto)))))
        (else (+ (mystery (car toto)) (mystery (cdr toto))))))
```

Problem 6: (Bonus: 20 points)  
Do problem 3 on page 369 of your textbook.