

**HW#3, CSCI 323, Spring 2003**  
**Department of Computer Science**  
**Queens College**  
**Dr. Song**  
**Due: April 2, 2003**

**Problem 1. R-2.14**

**Problem 2. R-2.18**

**Problem 3. R-4.3**

**Problem 4. R-5.4**

**Problem 5. R-5.6**

**Problem 6.**

1. Find the exact formula for  $T(n)$  for the following recurrence equations.  
Assume  $T(1) = 1$ .
  - (a)  $T(n) = 2T(n/2) + \log n$
  - (b)  $T(n) = 8T(n/2) + n^2$
  - (c)  $T(n) = 7T(n/3) + n$
2. Prove by induction that your result is correct for R-5.4 e.