

CS477/677 Analysis of Algorithms
Fall 2007 – Dr. George Bebis
Homework 1
Due Date: 9/6/07

1. **(U-required)** Show that
 - (a) $5n^2 = O(n^2)$
 - (b) $n^2 + 10n = O(n^2)$
 - (c) $n = O(n^2)$
 - (d) $5n^2 = \Omega(n^2)$
 - (e) $n \neq \Theta(5n^2)$
 - (f) $6n^2 + n \neq \Omega(n^3)$
 - (g) $a^n = O(b^n)$, $b > a > 1$
 - (h) $\lg n = O(n)$
2. **(U-required)** Exercise 2.2-1 (page 27)
3. **(U-required)** Exercise 1.2-3 (page 13)
4. Exercise 3.1-1 (page 50)
5. **(U-required)** Exercise 3.1-4 (page 50)