Fundamentals of Algorithms Fall 2012 Homework 1 Due: Monday August 27 at 10 AM

Prove By Induction that

1. 1 + 2 +3 + … +n = (1/2)(n)(n+1)
2. 1^2 + 2^2 + 3^2 + …+n^2 = (1/6)(n)(n+1)(2n+1)
3. 1^3 +2^3 + 3^3 + … +n^3 = (1/4)(n^2)(n+1)^2
4. 1 + 3 + 5 + … + (2k-1) = k^2
5. 1 + 2 + 4 + … + 2^k = 2^(k+1) - 1