PMAT 4340 – Combinatorial Analysis — Assignment #6
Fall 2006

Instructions

- Answer each question completely; justify your answers.
- This assignment is due at: 5:00 pm on Wednesday November 1st.

1. Exercise 6.3.15.
2. Exercise 6.3.17.
3. Exercise 6.4.2.
4. Exercise 6.4.6.
5. Exercise 6.4.8.
6. How many r-digit quaternary sequences are there in which the total number of 0's and 1's is odd?
7. Exercise 6.4.12.
8. Find an ordinary generating function $g(x) = \sum_{r \geq 0} a_r x^r$ such that
   (a) $a_r = 7r^2$
   (b) $a_r = 5 - 3r$
   (c) $a_r = r(r-1)(r-2)\cdots(r-17)$
9. Find an ordinary generating function $g(x) = \sum_{r \geq 0} a_r x^r$ such that
   (a) $a_r = 5r^2 - \frac{3r}{2}$
   (b) $a_r = (r+2)(r+1)(r)\cdots(r-99)$
10. Exercise 6.5.2.
11. Exercise 6.5.6.
12. Evaluate $\sum_{i=0}^{n} i^3$.
13. Evaluate $\sum_{i=0}^{n} 4 - i(i+1)(i+2)$.
14. Exercise 7.1.4.
15. Exercise 7.1.6.