MATH 4340 – Combinatorial Analysis — Assignment #6
Fall 2013

Instructions

- Answer each question completely; justify your answers.
- This assignment is due at 16:00 on Tuesday November 5th in Assignment Box #34.

1. Exercise 6.3.16.
2. Exercise 6.4.6.
3. Exercise 6.4.8.
4. Exercise 6.4.10.
5. Find an ordinary generating function $g(x) = \sum_{r \geqslant 0} a_r x^r$ such that
   (a) $a_r = 5r$
   (b) $a_r = r(r-1)(r-2)\cdots(r-12)$
6. Find an ordinary generating function $g(x) = \sum_{r \geqslant 0} a_r x^r$ such that
   (a) $a_r = 7r^2 - \frac{2r}{3}$
   (b) $a_r = (r+3)(r+2)(r+1)(r)\cdots(r-99)$
7. Exercise 6.5.2, parts (a), (c) and (e).
8. Exercise 6.5.6.
9. Evaluate $\sum_{i=0}^{n} 4 - i(i+1)(i+2)$.
10. Exercise 7.1.4.
11. Exercise 7.1.18.