PMAT 4340 – Combinatorial Analysis Assignment #5
Fall 2006

Instructions

- Answer each question completely; justify your answers.
- This assignment is due at: 5:00 pm on Wednesday October 25th.

1. Exercise 6.1.16.
2. Exercise 6.1.20.
3. Exercise 6.1.24.
4. Exercise 6.2.10.
5. Exercise 6.2.14.
6. Exercise 6.2.16.
7. Exercise 6.2.22.
8. Exercise 6.2.26.
9. Exercise 6.2.34.
10. Let a_r denote the number of ways to express r as a sum of perfect squares of positive integers.
    (a) Find a generating function for a_r.
    (b) Determine a_{30}.
11. Find a generating function for a_r, the number of integer solutions to the equation $e_1 + 3e_2 + 3e_3 + 7e_4 = r$, where $0 \leq e_1$, $0 \leq e_2$, $2 \leq e_3 \leq 8$, and $0 \leq e_4 \leq 20$.
12. Find a generating function for a_r, the number of partitions of r into 4 parts.
13. Exercise 6.3.2.
14. Exercise 6.3.4.
15. Exercise 6.3.12.