MATH 583, Dr. Z. , **Problem Set #1**, Mon., Feb. 10, 2003.

Due: Feb. 17, 2003.

Theory:

1)

a) Write all the partitions of n, in rev. lex. order, (L_n) for $1 \leq n \leq 5$.

b) Write all the partitions of n, in lex. order, L'_n. for $1 \leq n \leq 5$.

c) For $1 \leq n \leq 5$, compute $L_n \cap L'_n$, and compare it to N_n.

2) Write down, explicity, $e_i(x_1, x_2, x_3)$ and $h_i(x_1, x_2, x_3)$ for $i = 0, 1, 2, 3, 4$.

3) For $1 \leq n \leq 3$, express e_λ in terms of m_μ's for all partitions λ of $n = 3$. By solving for the m_μ's in terms of the e_λ's, express m_λ in terms of e_μ's.

Maple

1) Write the Maple syntax to express the sequence $\{i^3\}$, $1 \leq i \leq n$. using the `seq` function.

2) Write a nested `do` statement that prints, for every day of the year, the 365 sentences:

`'Today is Jan.  1, 2003';`

...

`'Today is Dec.  31, 2003';`

3) Give examples of `while` and `if` statements.