

Math 102  
Nov. 22, 1996

Little Quiz #12

Name \_\_\_\_\_  
Please Print

1. (a) Calculate the following sums

$$C_1 = 1 =$$

$$C_2 = 1 + 8 =$$

$$C_3 = 1 + 8 + 27 =$$

$$C_4 = 1 + 8 + 27 + 64 =$$

(b) Examine the results of part (a) to see if you can find a pattern which would enable you to find the sum

$$C_5 = 1 + 8 + 27 + 64 + 125 =$$

without actually adding these numbers

(c) Notice that the numbers 1, 8, 27, 64, 125 etc. are cubes of 1, 2, 3, 4, and 5 respectively. Make a conjecture as to the sum of the first  $n$  cubes of natural numbers

$$C_n = 1^3 + 2^3 + 3^3 + \dots + n^3 =$$