**Sheet (4):**

**1-**Write and test a recursive function that returns the sum of the squares of the first *n* positive integers.

**2-** Write and test a recursive function that returns the sum of the first n elements of an array.

**3-** Write and test a recursive function that returns the power xn

**4-** Write and test a recursive function that returns the integer binary logarithm of an integer n (i.e., the number of times n can be divided by 2).

**5-** Trace the recursive implementation of the Euclidean Algorithm (Example 9.13 on page 171) on the call gcd(385, 231).

**6-** The Towers of Hanoi program performs 7 disk moves for 3 disks. How many disk moves are performed for:

a. 5 disks?

b. 6 disks?

c. n disks?

**7-**Show the recursive call tree for the call hanoi(4,'A','B','C') in Example 9.15 on page 174.