APE Practice – In-class exercise and lab

15 points – see Canvas for due date

Recursion:

In the lab – see sign-in sheet.

- Part 1 - sumOfCubes Write the recursive method to compute the sum of the cubes. The table below shows the number, the cube value and the sum of the cubes for the first 4 numbers, starting at zero.

Number	Cube	Sum of Cubes
0	0	0
1	1	1
2	8	9
3	27	36

Take-home – submit on paper.

- Part 2 – Pascal's Triangle: Write the Java recursive method to compute any binomial coefficient in Pascal's Triangle. The following function of n and k, **long pascal(int n, int k)**, where n >= 0 and 0 <= k <= n. **Do NOT** attempt to modify **Tester.java**. Do **NOT** delete **any of the .class files** from the folder. Check the output file (**output.txt**) to see what is produced from running the driver.

  [For two non-negative numbers n and k, the binomial coefficient is (1 when n or k is equal to 0), (1 when n is equal to k); otherwise the binomial coefficient is recursively calculated with the sum of (n minus 1 and k minus 1) and (n minus 1 and k)]