

## MATH 1310 Programming Project #5

You have the whole class period to work on the project with your group. You are required to use your own calculator and turn in your own paper. Be sure to answer all of the questions asked.

1. Without using your calculator, create a table giving the values of  $J$ ,  $K$ , and  $L$  which would be displayed by this program each time through the loop. Once you have completed the table, you can type in the program to check.

```
: 0 → L
: For(K, 1, 5)
: 7 → J
: J + K → J
: J + K → L
: Disp J, K, L
: End
```

2. Write a program that asks the user for  $N$  numbers and displays their geometric mean.

3. Write a program called FIB that calculates and displays the first  $N$  Fibonacci numbers. Recall that the Fibonacci numbers are found by the recursive definition:

$$\begin{aligned}x_1 &= 1, \\x_2 &= 1, \\x_{n+1} &= x_n + x_{n-1}.\end{aligned}$$

Write down your program and the first 10 Fibonacci numbers.

4. Write a program called FIB2 that calculates the first  $N$  ratios of Fibonacci numbers where the first ratio is  $\frac{x_2}{x_1}$ , the second ratio is  $\frac{x_3}{x_2}$ , etc. What do you notice?