

## MATH 1310 Programming Project #2b (More on FOR loops)

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

1. Enter the following program into your calculator and run it for several inputs.  
: Prompt N  
: 1 → X  
: For (K,1,N)  
: X\*2 → X  
: End  
: Disp X
  - a) What is the output of the program?
  - b) Explain in detail how the FOR loop is operating. One way to see this might be to add the commands “Disp X” and “Disp K” inside the loop. What happens to X and to K each time through the loop?
  
2. Write a program which asks the user for N numbers and displays their average.
  
  
  
  
  
  
  
  
  
  
3. Write a program to prompt the user for the initial value ( $P_0$ ) and the continuous exponential growth constant (k) of an exponential growth equation  $P(t) = P_0 e^{kt}$ , then draw the graph of this equation. Note: If you input large values for  $P_0$  you may have to zoom out to see your graph well.
  
  
  
  
  
  
  
  
  
  
4. Write a program which asks the user to input a number N, then will plot N different exponential growth equations (without clearing the screen in between). For each equation, the user inputs an initial value and a continuous growth constant.