

## Programming Project 1 *collaboration permitted*



Create in Eclipse or NetBeans, a java project named **MathOperations** which permits a user to input any 2 real numbers (use variable names num1 and num2) from the console and output to the console any of the following binary operations as separate computations:

- sum (num1 + num2)
- difference (num1 – num2)
- product (num1 \* num2)
- quotient (num1 / num2)
- exponentiation (num1<sup>Num2</sup> )
- Factorial (num1! + num2!)
- sin(num1) + cos(num2)
- num1 mod(num2)

After any binary computation, permit the user to modify the input numbers (num1 and num2) for an additional computation or to exit the program.

### Requirements:

1. **Two** different classes **must** be created to implement the application (use these names):
  - a. Class **OperationsApp** which contains the main method.
  - b. Class **Operations** which is used to instantiate object(s) and contains the separate methods for each operation shown above.
2. Use double as the primitive type for num1 and num2.
3. Include a flow chart for your program.
4. Study the Java class Math API for use in your code. View the version 8 class Math API at: <https://docs.oracle.com/javase/8/docs/api/java/lang/Math.html>
5. **Prevent the division by zero. But otherwise, do not code for exceptions.**
6. Submit to your AP CS-A OneNote as a clearly identified single page under your Chapter 2 tab the code for each class. Include (paste) the input / output from your console at the end of the OneNote document to demonstrate your code works.
7. This project is due **NLT midnight Monday, 2-18-2019**.
8. Your code **may** be run in the classroom for inspection and discussion. Be prepared to explain/discuss the logic of your code.