# Shared Review Doc for Midterm 1 (will be posted on Canvas Monday evening)

## Programming Assignment Questions

* Does it matter how we make the program?
  + Lots of right and wrong ways to do it.
    - Program should run!
    - Should play Rock Paper Scissors
    - Should NOT be hard-coded
    - Should meet the requirements written in the instructions
* Documenting name & date in code
  + At the bottom of the program, add a comment with your name and the date (last date you worked on that version)
  + In a professional setting, you would put one comment indicating your work and there would be a list of all people who “touched” that piece of code
* How many test cases?
  + It depends.
  + 1. You have tested your code
  + 2. You have thought about what are likely bugs you might have made, and tried to test for those bugs.
    - Whenever you make a LOGIC (semantic) error in your code, write down on a piece of paper what that logic error was, and write a test that checks that fixed it.

## Exam Format Questions

* Will we have to write code?
  + At most a line or two. Some multiple-choice, some short answer

## Exam Topic Questions

* Compilation, (& linking,) & running C++ programs
* Error types
  + Syntax errors
  + Runtime errors
  + Logic (semantic) errors
* Variables
  + Declare, initialize
  + Changing variable values with = (assignment operator)
  + Naming conventions
* Main() function
* Cout, cin, getline()
* Operators
  + =
  + \*, +, -, /, %
  + +=, \*=, -=, /=
  + ==, >, <, >=, <=, !=
  + &&, ||, ! //Boolean operators
* Math functions
  + Sqrt()
  + Pow()
  + Fabs() // absolute value
* M\_PI (not technically a function – this is a constant defined in cmath)
* Include statements
  + Iostream
  + Cstdlib
  + Ctime
  + Cmath
  + String
  + Fstream
  + Iomanip
  + #define \_USE\_MATH\_DEFINES
* Variable types
  + String
  + Int
  + Double
  + Char
  + bool
* Random numbers
  + Srand()
  + Rand()
* String formatting
  + Setprecision
  + Showpoint
  + Fixed
  + setwidth
* Branches
  + Boolean expressions
  + If
  + If, else if, else
  + Switch
* Loops
  + While
  + Do-while
  + For
* Files
  + File input
  + File output