

Mathematics 2170 : Computer Science I

Topics for Exam 1

You are responsible for the topics covered in labs 1 through 4, slides, lectures, and handouts for weeks 1 through 4, and all assigned readings in the textbook. The summary of methods in Figure 2.8 will be available during the exam and you may use your workbook, but otherwise the exam will be closed-book. The following list of specific topics may help you in your preparation for the exam.

- Primitive data types, primarily `int`, `double`, and `boolean`
- Arithmetic operations and expression evaluation (including mixed mode expressions); utilizing integer division and the modulus operator
- Input using `readInt()` and `readDouble()`
- Output using `print()` (with `"\n"`) and `println()`
- Graphics classes: `GRect`, `G Oval`, `GLine`, and `GLabel`; messages & message passing; using the `Color` class
- Identifiers, Constants
- Declaration and initialization of objects
- The assignment operator, updating values through assignment; shorthand assignment, auto-increment and auto-decrement operators
- Type conversion through type casting
- Tracing Java code fragments
- Repetition patterns; `while` and `for` loops — writing and tracing
- Java program format: the `GraphicsProgram`, `SliderProgram`, `ConsoleProgram` and `DialogProgram` classes
- Java comments
- Graphics coordinate system
 - Using Cartesian coordinates, followed by scaling and translation
 - Direct use of coordinate system of the graphics output window
- `netbeans` and Java programming: steps involved in creating, building, and executing programs
- Web site maintenance: steps involved in publishing

Lab Exercises

- Lab 1: Hello World, Add2Integers, TemperatureConvert, RosePoem
- Lab 2: Target, LineHouse, Rainbow, RobotFace, DrawHouse
- Lab 3: Savings, CircleArea, ElapsedTime, SpiralCoords
- Lab 4: Reverse, LowerTriangle, DigitalRoot, CurveStitch