PFP Quiz2 Guide

Note: The quiz is closed book, closed notes. You are allowed to bring a calculator.

Here is a list of materials to review:

**Fundamentals**
Literals
Operators
Expressions
Types: int, double, char, char
Variables
Statements
Sequential Control flow
Block of Code
Conditional Statements: if, if-else, nested if-else
Loops: while, for
System.out.println method

**OOP**
What is an object?
What does object consist of? Data and Behavior
Behavior types: Query and Command
Classes are template for creating objects. Contain: data fields, methods, constructors.
Variables: instance, temporary/local variables, static
Methods: Know how to write a method
Constructor: how to write constructors and create objects with it
String Objects: String declaration and concatenation, string methods discussed in class from String API
What do keywords: public and private and final do?
Scope: accessibility of variables (static, instance and local)

**Has a Relationship**
When does object have a relationship with another variable?
Kinds of Memory: stack and heap
What is null?
Refer to the Reference Equality sheet for sample questions and assignment 3

**Array**
Arrays of Primitives & Objects:
  - know how to declare and initialize them
  - traverse a whole array

2D arrays will not be asked on this quiz
Programming Language
What is programming language vs Machine Language?
Most common Java Compiling Errors: E.g. missing semicolon, curly brace; assigning wrong types to variables etc.
What is Java byte code?
What is the java package with compiler and virtual machine known as?
What is an API?
What does the class interface contain?

Bits, Data Type and Operations

Convert from binary to decimal
Convert from decimal to binary
Different sign notations: Sign Magnitude, 1’s complement, 2’complement
Adding unsigned/signed binary numbers and detecting overflow – remember proper sign extension when doing addition
AND, OR and NOT operations on bits
Hex and Octal notation
Converting between base 2, 10, 8, 16
Floating point representation