Study guide for CS163/CS164 second midterm exam

You should be able to interpret or write Java code that uses any of the items shown below. These same topics will be covered on the programming quiz.

1) Methods
    a. Declaring (defining) methods
    b. Invoking (calling) methods
    c. Argument values and types
    d. Return values and types, including **void**
    e. Passing references vs. primitives
    f. Method overloading
    g. Local variables (not initialized)
    h. Scope of locals
2) Single-Dimensional Arrays
    a. Declaring, allocating, initializing arrays
    b. Array indexing, array access
    c. Array **length**
    d. Iterating arrays
    e. Arrays as method parameters
    f. Arrays as return values
    g. Linear search, Binary search
    h. Selection sorting
    i. Arrays class: **toString(), sort(), equals()**
    j. Command line arguments: **main (String[] args)**
3) Multi-Dimensional Arrays
    a. Declaring, allocating, initializing
    b. Array indexing, array access
    c. Array **array.length, array[i].length**
    d. Iterating arrays
    e. Arrays as method parameters
    f. Arrays as return values
4) Classes
    a. Classes versus Objects
    b. Class variables (**static**)
    c. Instance variable (non-static)
    d. **.** operator for data and method access
    e. Class and Instance methods
    f. Scoping of variables
    g. Instantiating an **object** from a class
    h. Class constructors
    i. Object references
    j. **public** versus **private** data and methods
    k. Getter and Setter methods
    l. Arrays of objects
    m. **this** keyword
5) Bitwise operators
    a. & (and)
    b. | (or)
    c. ^ (xor)
    d. ~ (not)
    e. << left shift
    f. >> right shift