Final Exam Topics
Review Topics from Exam 1 and 2. The final is CUMMULATIVE.

Recursion

When is a function recursive? What is a recursive case? In what circumstances is recursion used? What is the difference between iteration and recursion? How can one identify a function as recursive? How can one identify a stopping case? What is the difference between a base case and a recursive case? How are stack overflow and recursion related? What is infinite recursion?

Streams

What is a stream? How does file input/output relate to console input/output? What is the difference between them? Show how to open a file for reading. Show how to open a file for writing. Show how to write all output from a program to a file rather than to the console. Show how to read input for a program from a file rather than from the console.

Classes

What is a C++ class? What is the syntax to write one? What is the distinction between a class and an object? What is the difference between public and private members of a class? How do we use the classes that we have written in code? What are constructors, and what do we use them for? Why do we make data members private? What is one reason that we should put our classes in separate files, instead of in main? What is the dot operator and how is it used?

Pointers

What are pointers? How are the heap and stack different? How do we allocate new memory on the heap? How do we deallocate memory from the heap? What is the dereferencing operator and how is it used? What is the arrow operator and how is it used? What is the primary function of pointers in modern C++?