Midterm summary

Here are the sort of questions you might encounter:

- Apply an algorithm we have studied to a straight-forward example of the sort of problem it was meant to solve
- Write a small amount of C (about a dozen lines) to use a concept studied
- Reason about the limitations and/or expected results of algorithms studied when they are applied to a particular problem

Here are some of the topics you're responsible for

1. Read and write C programs that include declarations, assignments, I/O, loops, conditionals, arrays, structures, functions
2. Machine representation of numbers and errors resulting from operations on them
3. Root-finding methods: bisection, Newton's
4. Numerical integration: rectangle, trapezoidal, and Simpson's rule
5. Graph theory definitions
6. Graph representation (adjacency) on a computer
7. Representation of weighted graphs
8. Shortest path algorithms: Dijkstra, Floyd-Warshall
9. Graph traversals (DFS, BFS)
10. Cycle-detection, union-find

Materials you should review:

1. Course Readings on numerical methods (including integration)
2. Course Readings on graph theory (8.1, 8.2, 8.3, beginning of 8.4)
3. On-line lecture summaries
4. Assignments 1 and 2