**MATH 61-02: WORKSHEET 12 (§7.2)**

(W1) Consider the Fig 7.7 in the book (p253), which shows airline connections between cities.

(a) Ordering the cities alphabetically, write the adjacency matrix $A$ for the graph.

(b) Show by hand that it is possible to get form Seattle to Miami in 10 flights.

(c) Using a computer (or by hand if you want), compute $A^8$ and $A^{10}$. How many ways are there to get from Seattle to Miami in 10 flights? How about Chicago to Atlanta in 8 flights? Explain the connection.

(W2) The second midterm included a question about the relation $R = \{(x, x), (x, y), (y, y), (y, x), (z, z)\}$ on $S = \{x, y, z\}$ where you were supposed to check that it is transitive. Draw the graph associated to the relation, and use the adjacency matrix to verify transitivity.