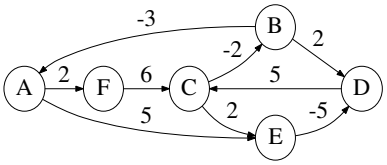
Today All-pairs shortest paths. §§ 25.*
Next class NP completeness. §§ 34.{1,2,3}.
Reminders Newsgroup. Homework. Posters and portfolios.

1. List the members of your group below. Underline your name.

2. (4 pts.) Is the following a valid *predecessor matrix* for a graph with vertices $\{1, 2, 3, 4\}$. (where $\perp$ denotes NIL)? If so, depict the shortest-paths tree it encodes for source vertex 3; otherwise, explain clearly why it is not valid.

$$\begin{pmatrix} \perp & 3 & 4 & 1 \\ 2 & \perp & 2 & 3 \\ 2 & 3 & \perp & 2 \\ 4 & 4 & 1 & \perp \end{pmatrix}$$

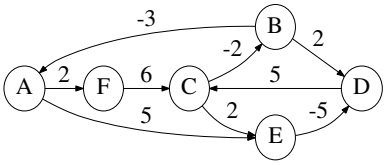
3. Provide the adjacency matrix of the directed graph depicted below, indexing the vertices in alphabetical order.



4. Depict the output of EXTEND-SHORTEST-PATHS(W,W) (p. 688 of the textbook), where W is the matrix of Question 3.

5. Trace the execution of the textbook's SLOW-ALL-PAIRS-SHORTEST-PATHS algorithm (p. 689) on the graph of Question 3, using Fig. 25.1 (p. 690) as a guide.

6. Repeat Question 5 using the textbook's FASTER-ALL-PAIRS-SHORTEST-PATHS algorithm (p. 691).



7. Repeat Question 5 using the Floyd-Warshall algorithm.