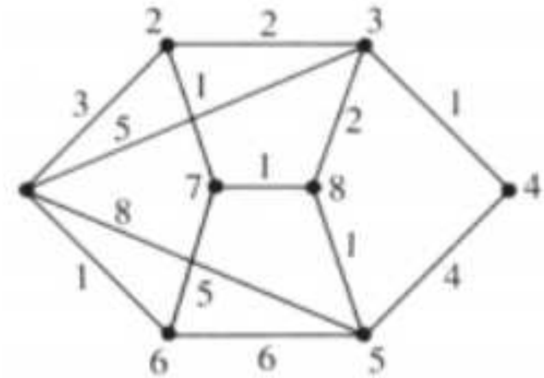
Example: #3, p. 591 : Apply Dijkstra's algorithm for the pairs of nodes 1 and 5; show the values for p and IN and the d values and s values for each pass through the while loop. Write out the nodes in the shortest path and the distance of the path.



$$\begin{bmatrix} 0 & 3 & 5 & \infty & 8 & 1 & \infty & \infty \\ 3 & 0 & 2 & \infty & \infty & \infty & 1 & \infty \\ 5 & 2 & 0 & 1 & \infty & \infty & \infty & 2 \\ \infty & \infty & 1 & 0 & 4 & \infty & \infty & \infty \\ 8 & \infty & \infty & 4 & 0 & 6 & \infty & 1 \\ 1 & \infty & \infty & \infty & 6 & 0 & 5 & \infty \\ \infty & 1 & \infty & \infty & \infty & 5 & 0 & 1 \\ \infty & \infty & 2 & \infty & 1 & \infty & 1 & 0 \end{bmatrix}$$

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
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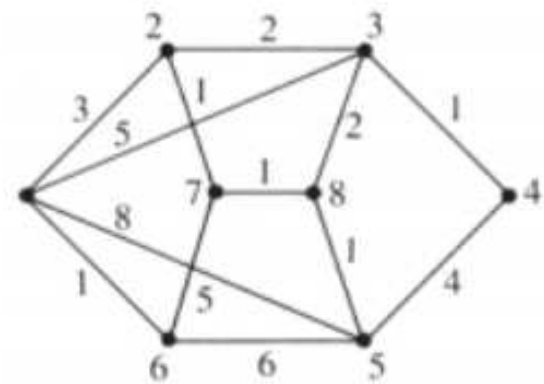
	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

Example: #12, p. 593 : for the graph of Exercise 3, use the Bellman–Ford algorithm to find the shortest path from the source node (1) to any other node. Show the successive d values and s values. Again, we'll need the adjacency matrix:



$$\begin{bmatrix} 0 & 3 & 5 & \infty & 8 & 1 & \infty & \infty \\ 3 & 0 & 2 & \infty & \infty & \infty & 1 & \infty \\ 5 & 2 & 0 & 1 & \infty & \infty & \infty & 2 \\ \infty & \infty & 1 & 0 & 4 & \infty & \infty & \infty \\ 8 & \infty & \infty & 4 & 0 & 6 & \infty & 1 \\ 1 & \infty & \infty & \infty & 6 & 0 & 5 & \infty \\ \infty & 1 & \infty & \infty & \infty & 5 & 0 & 1 \\ \infty & \infty & 2 & \infty & 1 & \infty & 1 & 0 \end{bmatrix}$$

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
d								
s								

	1	2	3	4	5	6	7	8
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	1	2	3	4	5	6	7	8
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	1	2	3	4	5	6	7	8
d								
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