Exam 2 Review

1. Use a dynamic programming algorithm to compute the binary coefficient $C(5, 3)$. Show steps.

1. A greedy solution for the Job Sequencing with Deadlines problem is to sort the jobs by their profits in nonincreasing order, then consider the jobs one at a time. Give a counterexample to show that this doesn't necessarily yield an optimal solution.
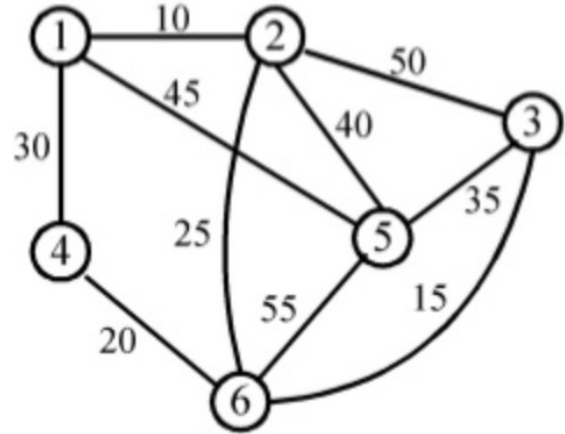
Exam 2 Review

Consider the following jobs. Use the Scheduling with Deadlines algorithm to maximize the profit. Show the values in `finalSequence` and `temp` after each step

Job	Deadline	Profit
1	2	20
2	1	50
3	3	60
4	2	25
5	5	5
6	1	45
7	2	55
8	5	5

Kruskal's Algorithm

Use Prim's Algorithm and Kruskal's algorithm
to find a minimum spanning tree for this graph.

For Prim's: Show the arrays values in nearest
and distance after each step.

Exam 2 Review

Given arrays of the following sizes, determine the optimal order of multiplication. Show the arrays M and P as well your work for each step:

$$A_1 \quad \times \quad A_2 \quad \times \quad A_3 \quad \times \quad A_4$$

$$5 \times 3 \qquad 3 \times 4 \qquad 4 \times 6 \qquad 6 \times 5$$

Exam 2 Review

1. Use Dijkstra's Algorithm to find the shortest path from vertex 3 to all the other vertices in the following graph. Show actions step by step.

	1	2	3	4	5	6
1	0	∞	7	1	9	3
2	∞	0	1	4	5	7
3	1	15	0	∞	7	9
4	3	2	8	0	∞	3
5	10	1	12	∞	0	2
6	2	8	9	3	8	0