Dynamic Programming

Homework #1

1. Text problem 1.1a–b (3rd Edition) or 1.2a–b (4th Edition)
2. Text problem 1.16a–b (3rd Edition) or 1.8a–b (4th Edition)
3. Text problem 1.24 (3rd Edition) or 1.7 (4th Edition)
4. Text problem 2.1 (3rd or 4th Edition)
5. MATLAB problem: Write a MATLAB function to use DP to solve the shortest path problem discussed in lecture. The function should have the format

   ```
   route = pathplan(L)
   ```

   where `L` is a 3-dimensional matrix that expresses the distance between nodes (see lecture notes)

   $$\texttt{L(i,j,k)} = \lambda_{ij}^{k}$$

   and `route` is a sequence of nodes. You may assume zero distance to starting and terminal nodes (i.e., $\lambda_{si}^{0} = 0$ and $\lambda_{it}^{N} = 0$, where s is the starting node, t is the terminal node, and N is the number of stages. Note that you will be able to determine the number of nodes and stages from the dimension of `L`.