1) (12 pts) Consider the Coin Collection Problem in which a robot can either move one cell down or one cell to the right during each move. The robot starts from cell (1, 1) and has to reach cell (5, 6): Find the maximum value of the coins that the robot could collect when it reaches cell (5, 6) and also trace the path.

Maximum value of the coins collected is 31.
2) (13 pts) Use a dynamic programming algorithm to find the Longest Common Subsequence between the two sequences:
X = AGACATA
Y = GTACAAT

Also, use the dynamic programming table determined for the above two sequences to determine the Longest Common Subsequence for
X' = AGACA
Y' = GTACAAT

The alignment between X and Y is as shown below:

```
A G A C A T A -
- _ G T A C A - A T
```

GACAA of length 5 is the longest common subsequence.

The alignment between X' and Y' is as shown below:

```
A G - A C - A -
- _ G T A C A A T
```

GACA of length 4 is the longest common subsequence. We use the only highlighted part of the table above to determine this.