Week 4 Quiz

Q1.

Consider the following two strings:

```
"GTACT"
"GCTAC"
```
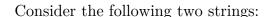
What's the longest common subsequence between them?

    A. 1

    B. 2

    C. 3

    D. 4

Q2.

Which statement about dynamic programming for finding the nth Fibonacci number is true?

    A. It requires $O(n)$ space, since the first $n - 1$ Fibonacci numbers must be stored before finding the nth

    B. The running time is exponential because of the structure of the recursive call tree

    C. Top-down dynamic programming can't be used because each Fibonacci number is defined in terms of *two* other Fibonacci numbers

    D. It's possible to only use $O(1)$ space if computed carefully

Q3.

When solving the rod cutting problem using memoization, which of the following statements about its impact on efficiency is most accurate?

    A. Memoization increases the space complexity due to additional space overhead.

    B. Memoization guarantees linear time complexity for any input size.

    C. Memoization has no effect on the time complexity of the rod cutting problem.