1. Explain the concept of recursion and how it can simplify certain problems.

Recursion is defined as a process which calls itself directly or indirectly and the corresponding function is called a recursive function.

* The primary property of recursion is the ability to solve a problem by breaking it down into smaller sub-problems, each of which can be solved in the same way.
* A recursive function must have a base case or stopping criteria to avoid infinite recursion.
* Recursion involves calling the same function within itself, which leads to a call stack.
* Recursive functions may be less efficient than iterative solutions in terms of memory and performance.

1. Discuss the time complexity of your recursive algorithm.

O(n), where n is the number of periods.

1. Explain how to optimize the recursive solution to avoid excessive computation.

Optimization can be done by Memoization or tail recursion.

Memoization: Store the results of expensive function calls and reuse them when the same inputs occur again.

Tail Recursion: A recursive function is tail-recursive if the recursive call is the last operation in the function.