Question 1:

Seen in the file Q1.py, the Fibonacci sequence given to us at the start of the course. This is O(n^3)

Question 2:

The 3-SAT problem is likely within NP as it should check set n once or for loop through n once thus creating O(n) or O(n^2)

Question 3:

The Closest String problem is likely also within NP as it gets inputs n, m, k (n, m creating a list) and computing complicated Hamming distance calculations, however it should be under a single for loop thus creating O(n)

Question 4:

The Maximum Cut problem is likely within NP as once it has gains needed inputs of graph g, subset s it shall find where s begins and take whichever is the greater side of the graph. This will only take a single for loop leaving this in O(n). It will also check if cut at s is greater than k

Question 5:

I honestly have absolutely no clue

Question 6:

a) Problem B should also be NP Complete
b) Problem A should be in P

Question 7:

a) This is in the class NP as a tree can be represented as a matrix or n^2, and the algorithm should loop through the matrix thus allowing the complexity to be O(n^2)
b) Refer to Question 5

Not too sure what I'm doing, gave it a bit of a blind shot. Sorry you had to read this :)