Show all work clearly and in order. Justify your answers whenever possible; You have 30 minutes to take this 10 point quiz.

1. (5 points) Given a list of $n$ intervals $\{I_0, I_1, \cdots, I_n\}$, where $I_i = (s_i, e_i)$ is a 2-tuple composed of two real numbers and $s_i \leq e_i$, design a greedy algorithm that finds the largest set of non-overlapping intervals. Please describe the ideas of your algorithm first and then provide a pseudocode.

(problem #2 is on the back of the sheet)
2. (5 points) What is the optimal variant length coding for the following text: “adecadb-cadeebbeae”? Please provide a binary cipher for each character a-e.