

[30] **Homework 6. String and Graph Algorithms**

Due by: November 29th, by the end of class.

[10] Let P be a given pattern of length m and T a text of length n . Find an efficient algorithm that finds the longest prefix of P being a substring of T .

[10] Let $T = t_1t_2 \dots t_n$ and $P = p_1p_2 \dots p_m$. It is said that P is a *circular substring* of T if there exists an index $1 \leq k \leq n$ such that

$$t_{(k+i-1) \bmod n} = p_i,$$

for $1 \leq i \leq m$. Find an efficient algorithm that determines whether P is a circular substring of T .

[10] Using Dijkstra's algorithm find the shortest path from vertex C to E in the graph shown below. Show all of your work.

