Last name	
First name	
Group	

Grade	

Algorithmics
Undergraduate 2^{nd} year S4
Final Exam #4 (P4)
14 May 2019
Answer Sheets

1	
2	
3	
4	

Answers 1 **(Restyled Floyd –** ***3 points*****)**

1. How to change Floyd's algorithm so that it detects negative cycles?

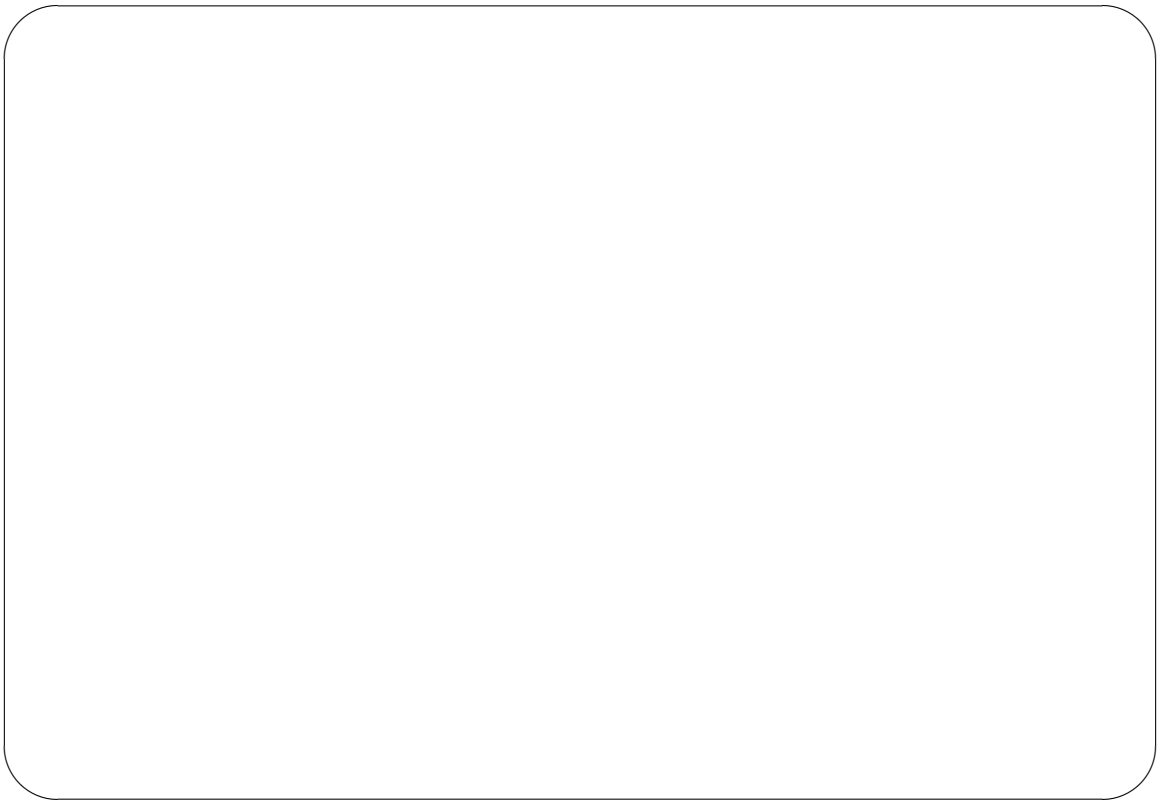
2. How to can use the Floyd's algorithm to find the center of a graph?

***Answers 2* (MST or not? – *2 points*)**

Is the spanning subgraph T a MST of G? YES – NO

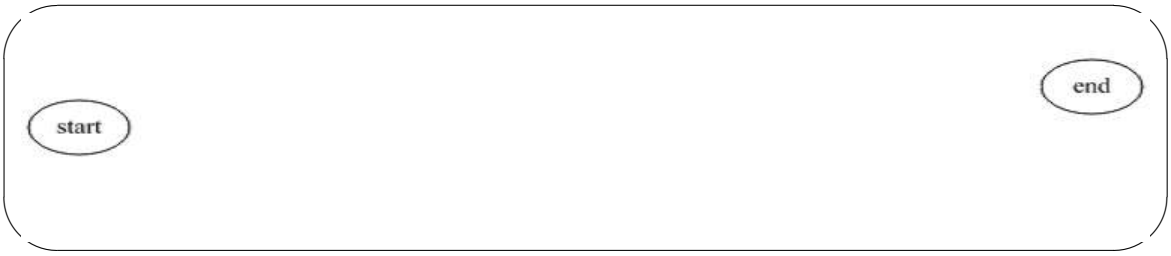
If it is, explain why:

Otherwise, give an example:



Answers 3 **(Eat Crepes –** ***11 points*****)**

1. Graph that represents the recipe:



2. **Specifications:**
   The function `tri_topo (`G`)` returns a topological sort for the acyclic digraph G, where all the vertices are reachable from the vertex 0.

3. (a) *How can we computes the earliest start dates in this kind of graph?*

Early start dates for each task of the crepe recipe:

start	A	B	C	D	E	F	G	H	I	J	*end*

(b) Minimal duration before we eat our crepe?

(c) *How can we computes the late start dates?*

(d) **Specifications:**
The function `duration(`G`)` comutes the minimum duration to complete the project represented by the digraph G.

Answers 4 **(Prim, Quite Simply –** ***5 points*****)**

Specifications:

The function `Prim(`G`)` returns a MST (`Graph`) of the connected graph G.