Last name	
First name	
Group	

Grade	

1	
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5	
6	

Algorithmics
Undergraduate 2nd year (S3)
Final Exam #3 (P3)
18 December 2018 - $9:30$
Answer Sheets

Answers 1 (**Warshall - Union-Find** – *3 points*)

1. Connected components (vertex sets):

   C_1 : _____ C_2 : _____

   ...: _____   ...: _____

   ...: _____   ...: _____

2. Which vectors could correspond to the result?

   ☐ P_1 ☐ P_2 ☐ P_3 ☐ P_4

Answers 2 (**In the depth of the spanning forest** – *2 points*)

Spanning forest and extra-edges for the depth-first search of the graph in figure 1:

Answers 3 (Components – 3 points)
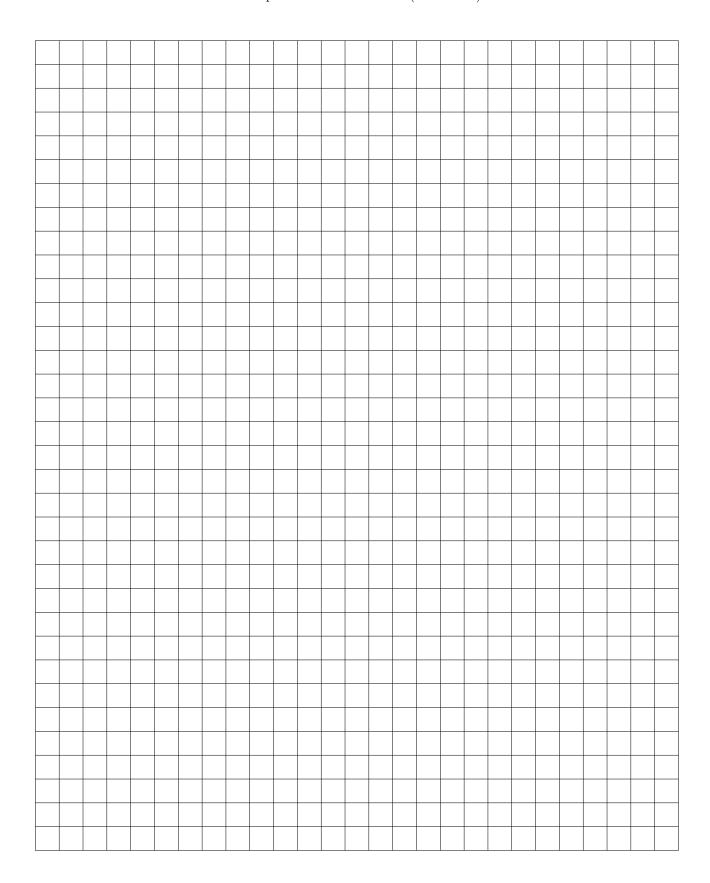
Specifications:

The function components(G) returns the pair (k, cc) with k the number of connected components of the graph G and cc is the component vector.
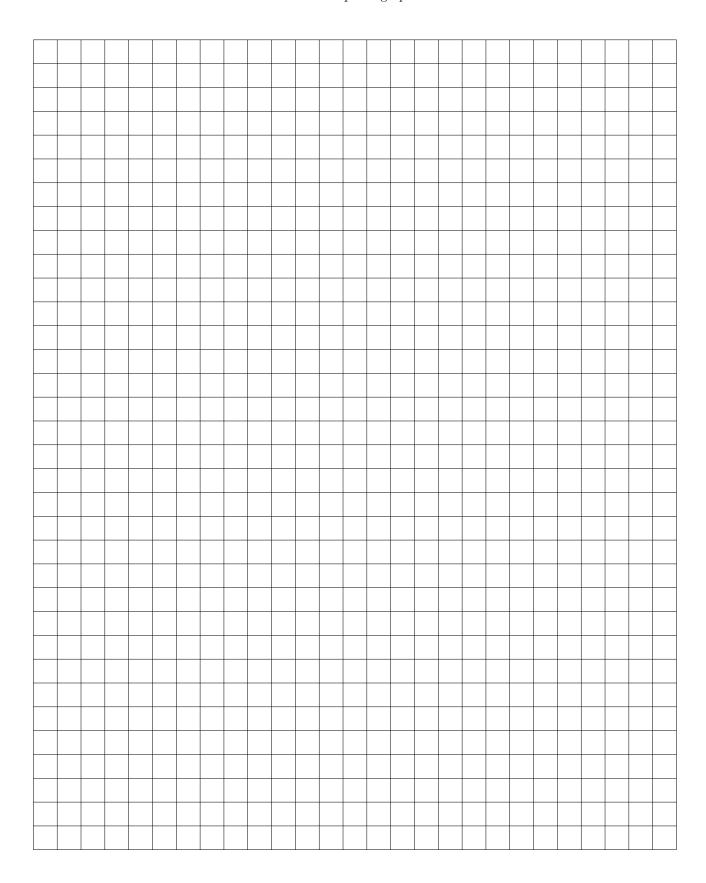
Answers 4 (**Diameter** – *5 points*)

Specifications:
The function `diameter`(G) computes the diameter of G (G is a tree).

Answers 5 (**Euler** − ***6 points***)

Specifications:

The function `Euler(`G`)` tests whether the simple G graph is *Eulerian*.

Answers 6 (What is this? – 3 points)

1. Result returned by `what`(G_4):

lc $=$ ⬜

	0	1	2	3	4	5	6	7	8	9	10	11	12	13
d														

2. d represents:

_____

_____

_____

3. lc represents:

_____

_____

_____

_____