

Last name	
First name	
Group	

Grade	
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**Algorithmics**  
**Undergraduate 1<sup>st</sup> year (s1)**  
**Final Exam #1 (P1)**  
**3 Jan. 2017 - 10 : 00**  
**Answer Sheets**

1	
2	
3	
4	
5	
6	

**Answers 1 (Stacks and garage... – 3 points)**

1. Are the following sequences valid? (circle the right answer)

(a)  $(v_1, e_1), (v_2, e_1), (v_3, e_1), s, s, (v_4, e_2), (v_5, e_1), s, s, s, (v_6, e_2), s$  :    YES    NO

If no, describe why: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

(b)  $(v_1, e_1), (v_2, e_2), s, (v_3, e_2), s, s, s, (v_4, e_1), (v_5, e_2), s, (v_6, e_1), (v_7, e_2), s, s$  :    YES    NO

If no, describe why: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. The rule: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Answers 2 (Binary Search: search "path" – 2 points)**

Circle the **impossible** search sequence(s):

①      ②      ③      ④



**Answers 5 (Histogram and sort – 4 points)**

1. The function `hist(L)` returns the list that represents the histogram of the values in  $L$  ( $L$  contains only digits):


2. The function `sort(L)` returns the list  $L$  sorted in increasing order ( $L$  contains only digits):


