

# Algorithms and Data Structures

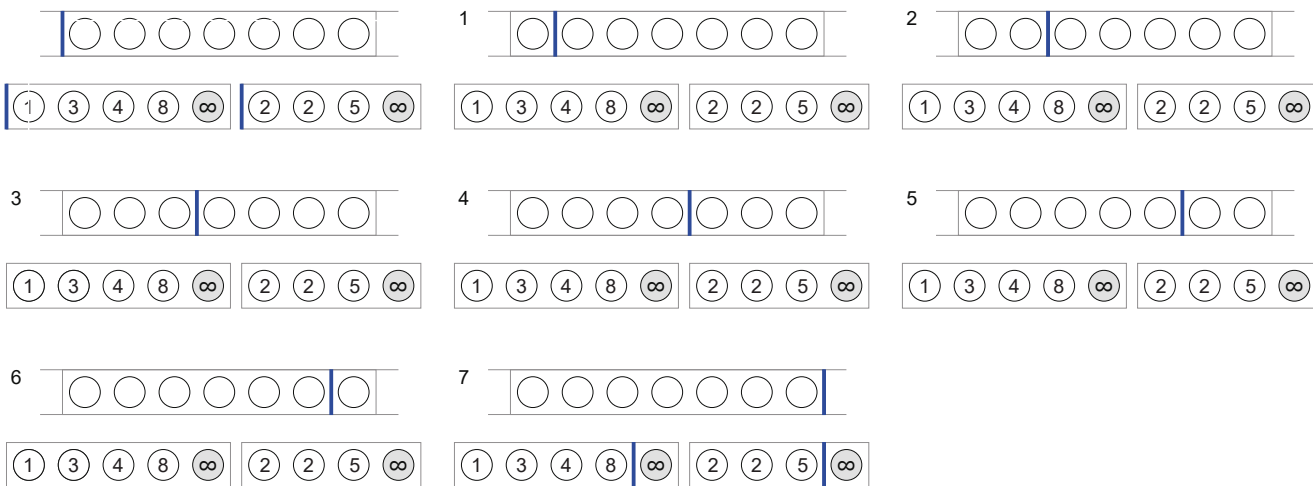
## Algorithm Assignment: Lecture 5

ID: \_\_\_\_\_

Name: \_\_\_\_\_

1. Write a pseudocode of a recursive function which computes  $n!$  (factorial of  $n$ ).

2. Merge two ordered sequences  $A = \{1, 3, 4, 8\}$  and  $B = \{2, 2, 5\}$  into an ordered sequence. You should use sentinels in your algorithm. Indicate indices (vertical bars) of  $A$  and  $B$ .



3. Illustrate a procedure of the Merge Sort algorithm based on lecture note for sorting a sequence  $A = \{7, 4, 3, 1, 8, 1, 9, 6, 5\}$  in ascending order. Fill the elements from 1 to 24 in order to follow the Divide and Conquer algorithm.

