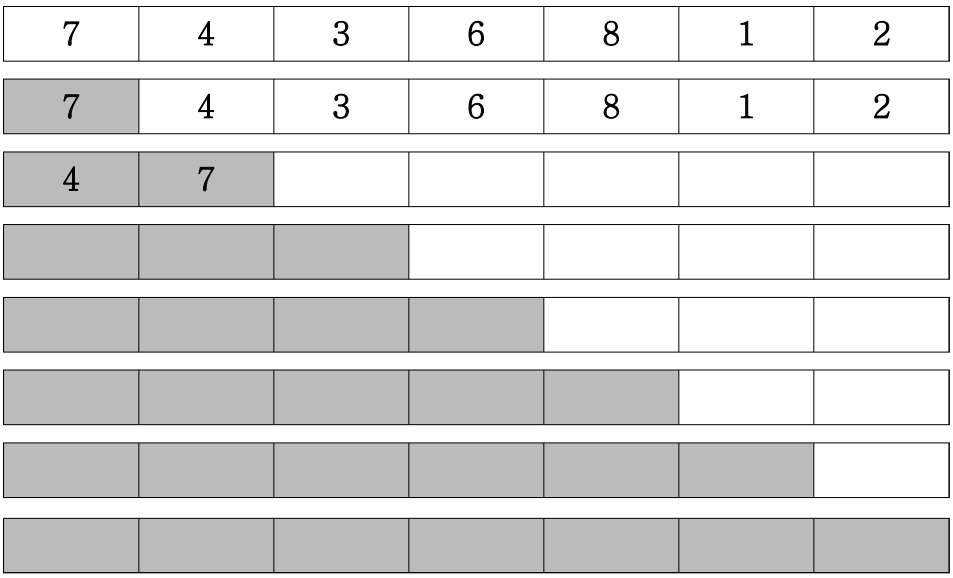
Review 1

1. Fill in the blank entries when the numbers are sorted by insertion sort in non-decreasing order.



2. Fill in the blanks with proper number of iterations.

INSERTION-SORT(*A*)	cost	number of iterations
for $j = 2$ **to** n	c_1	
$key = A[j]$	c_2	
$i = j - 1$	c_4	
while $i > 0$ and $A[i] > key$	c_5	
$A[i + 1] = A[i]$	c_6	
$i = i - 1$	c_7	
$A[i + 1] = key$	c_8	

t_j : The number of executions of the while loop test for j.

3. What is the running time of insertion sort when the input size is n?

(a) best case: $\theta(\quad)$, t_j = $\square$

(b) worst case: $\theta(\quad)$, t_j = $\square$