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**Algorithm 1** 用归并排序求逆序数

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**Input:** *Array*数组, *n*数组大小

**Output:** 逆序数

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1: function MERGESORT(Array, left, right)
2:   result  $\leftarrow$  0
3:   if left < right then
4:     middle  $\leftarrow$  (left + right)/2
5:     result  $\leftarrow$  result + MERGESORT(Array, left, middle)
6:     result  $\leftarrow$  result + MERGESORT(Array, middle, right)
7:     result  $\leftarrow$  result + MERGER(Array, left, middle, right)
8:   end if
9:   return result
10: end function
11:
12: function MERGER(Array, left, middle, right)
13:   i  $\leftarrow$  left
14:   j  $\leftarrow$  middle
15:   k  $\leftarrow$  0
16:   result  $\leftarrow$  0
17:   while i < middle and j < right do
18:     if Array[i] < Array[j] then
19:       B[k ++]  $\leftarrow$  Array[i ++]
20:     else
21:       B[k ++]  $\leftarrow$  Array[j ++]
22:       result  $\leftarrow$  result + (middle - i)
23:     end if
24:   end while
25:   while i < middle do
26:     B[k ++]  $\leftarrow$  Array[i ++]
27:   end while
28:   while j < right do
29:     B[k ++]  $\leftarrow$  Array[j ++]
30:   end while
31:   for i = 0  $\rightarrow$  k - 1 do
32:     Array[left + i]  $\leftarrow$  B[i]
33:   end for
34:   return result
35: end function
```

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