

# MERGE-SORT( $A, p, r$ )

```
1  if  $p \geq r$                                 // zero or one element?
2      return
3   $q = \lfloor (p + r) / 2 \rfloor$                     // midpoint of  $A[p : r]$ 
4  MERGE-SORT( $A, p, q$ )                          // recursively sort  $A[p : q]$ 
5  MERGE-SORT( $A, q + 1, r$ )                      // recursively sort  $A[q + 1 : r]$ 
6  // Merge  $A[p : q]$  and  $A[q + 1 : r]$  into  $A[p : r]$ .
7  MERGE( $A, p, q, r$ )
```