

5) Assume  $(i, j) \leftarrow \text{MinMax}(A, p, r)$

$\downarrow$   $\uparrow$   
 smallest largest

only:  $\downarrow$  compression

a)  $\text{test}(A, p, r) \{$

$B[]$  clear all; // meaning  $B[1] \sim B[2] \sim \dots \sim B[n] = 0$

$k = 1$

while  $A.\text{length} > 1$

$(i, j) \leftarrow \text{minmax}(A, 1, A.\text{length})$

$B[k] = i$

$B[n-k] = j$

$k++$

$A[i, j]$  Delete from Array

End while

if  $A.\text{length} = 1$  then

$B[k] = A[n]$

End if

Return  $B$ ;

}

b) no. comparisons:  $B$  is even  $n/2$

$B$  is odd  $n-1/2$

$$c) \frac{n(\frac{3n}{2} - 2)}{2} = \frac{3n^2}{4} - n$$