PARTITION(A, p, r)

    $x = A[r]$
    $i = p - 1$
    for $j = p$ **to** $r - 1$
        if $A[j] \leq x$
            $i = i + 1$
            exchange $A[i]$ with $A[j]$
    exchange $A[i + 1]$ with $A[r]$
    return $i + 1$