

29. Minimum size subarray sum:

IE target = 7, nums = [2, 3, 1, 2, 4, 3]

Q: 2

Explanation: The subarray [4, 3] has the minimal length under the problem constraint.

Brute force  $\rightarrow$  slow way  $O(n^2)$ :

Optimized:

use two pointers: start and end

Expand end to increase the sum

shrink start when sum  $\geq$  target.

class Solution {  
public int minSubArrayLen (int target, int[] nums) {

int left = 0;

int sum = 0;

int minLength = Integer.MAX\_VALUE;

for (int right = 0; right < nums.length; right++) {  
sum = sum + nums[right];

while (sum  $\geq$  target) {

minLength = Math.min (minLength, right - left + 1);

sum = sum - nums[left];

left++;

}

}

return minLength == Integer.MAX\_VALUE ? 0 :  
minLength;

}

}

Time  $\rightarrow O(n)$  space  $\rightarrow O(1)$ .