Length of the Largest Clump

One way to tell whether a sequence of outcomes is truly random is to count the number of "clumps" of successes. For instance, suppose you were asked to flip a coin 100 times and write the sequence of Heads and Tails you obtain. You may write

TTHTTHHTTTHTTHTHHTTTTHTTTTTHTHTHHHHTTHTHHHTTHHHTTTHTTHHHHTHTHTHTTTTTHHHTHTHTHHHTHHTTTTHTTHTHHTTTHTHHH

The longest clump of Tails is five, and the longest clump of Heads is four.

Given a vector *x* of successes and failures, the objective of this assignment is to write the R function `clumps.r` that calculates the length of the largest "clump" of successes or failures.

Input *x*, a vector of successes and failures.

Output *C*, the length of the largest clump of successes or failures.

The R script contains several examples. You should get the same results.

```
> source('~/Documents/R Folder/clumps_examples.r')
Example 1
TRUE TRUE TRUE TRUE TRUE TRUE FALSE TRUE FALSE FALSE
6
Example 2
TRUE FALSE FALSE FALSE FALSE FALSE TRUE FALSE FALSE FALSE TRUE FALSE TRUE TRUE
FALSE FALSE TRUE FALSE FALSE TRUE
5
Example 3
TRUE FALSE TRUE TRUE FALSE FALSE TRUE TRUE FALSE TRUE FALSE FALSE FALSE FALSE
FALSE TRUE FALSE TRUE TRUE FALSE TRUE TRUE TRUE FALSE FALSE FALSE TRUE FALSE TRUE
TRUE
5
Example 4
9
Example 5
10
```