LargestBalancedRadius

Given a set of points on a plane, find the largest number of points that can be enclosed within a circle centered on the origin, such that the number of red points and green points inside it is equal.

There are N points (numbered from 0 to N−1) on a plane. Each point is colored either red ('R') or green ('G'). The K-th point is located at coordinates (X[K], Y[K]) and its color is `colors`[K]. No point lies on coordinates (0, 0).

We want to draw a circle centered on coordinates (0, 0), such that the number of red points and green points inside the circle is equal. What is the maximum number of points that can lie inside such a circle? Note that it is always possible to draw a circle with no points inside.

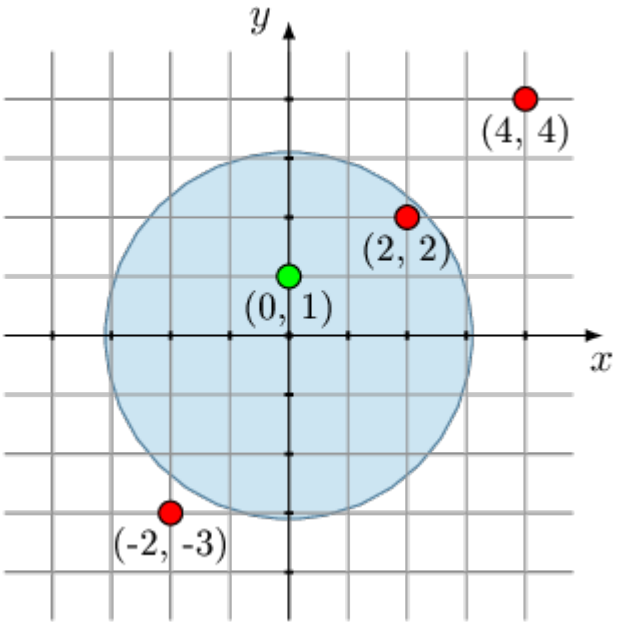
Write a function:

```
function solution(X: number[], Y: number[], colors: string): number;
```

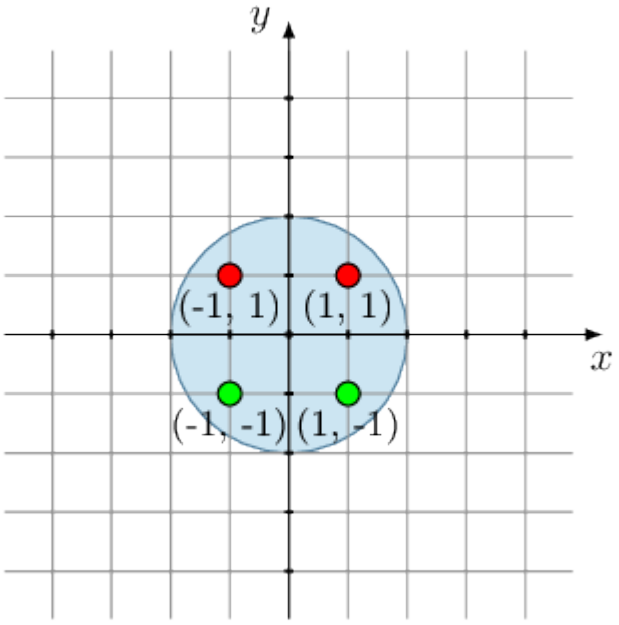
that, given two arrays of integers X, Y and a string `colors`, returns an integer specifying the maximum number of points inside a circle containing an equal number of red points and green points.

Examples:

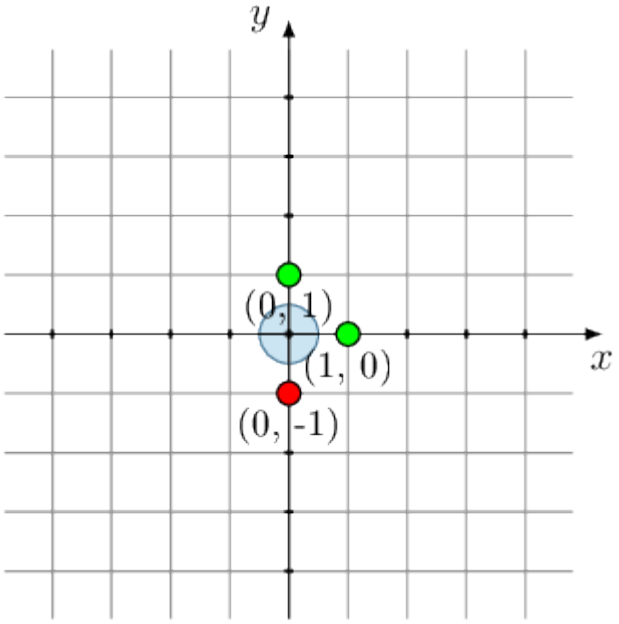
1. Given X = [4, 0, 2, −2], Y = [4, 1, 2, −3] and `colors` = "RGRR", your function should return 2. The circle contains points (0, 1) and (2, 2), but not points (−2, −3) and (4, 4).



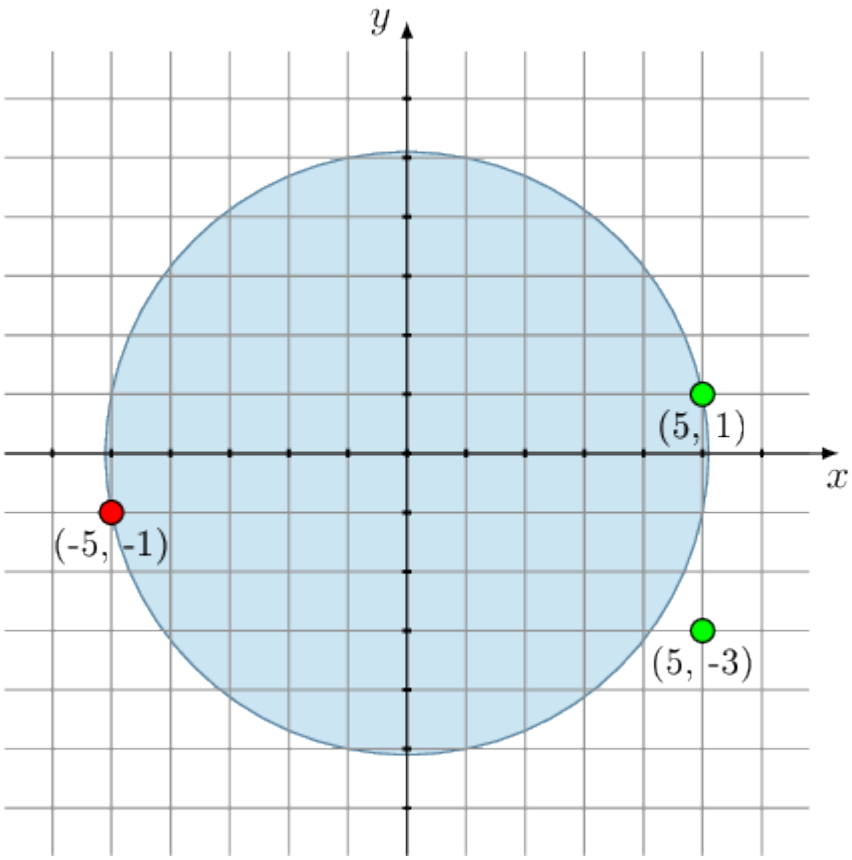
2. Given X = [1, 1, −1, −1], Y = [1, −1, 1, −1] and `colors` = "RGRG", your function should return 4. All points lie inside the circle.



3. Given X = [1, 0, 0], Y = [0, 1, −1] and `colors` = "GGR", your function should return 0. Any circle that contains more than zero points has an unequal number of green and red points.



4. Given X = [5, −5, 5], Y = [1, −1, −3] and `colors` = "GRG", your function should return 2.



5. Given X = [3000, −3000, 4100, −4100, −3000], Y = [5000, −5000, 4100, −4100, 5000] and `colors` = "RRGRG", your function should return 2.

Write an **efficient** algorithm for the following assumptions:

- N is an integer within the range [1..100,000];
- each element of arrays X and Y is an integer within the range [−20,000..20,000];
- string `colors` is made only of the characters '`R`' and/or '`G`';
- no point lies on the coordinates (0, 0).