C. The Hard Work of Paparazzi

2 seconds

256 megabytes

standard input

standard output

You are a paparazzi working in Manhattan.

Manhattan has https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5r south-to-north streets, denoted by numbers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2026.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.51,2,…,r in order from west to east, and https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5r west-to-east streets, denoted by numbers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2026.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.51,2,…,r in order from south to north. Each of the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5r south-to-north streets intersects each of the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5r west-to-east streets; the intersection between the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5x-th south-to-north street and the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5y-th west-to-east street is denoted by https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(x,y). In order to move from the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(x,y) to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/2032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/2032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(x′,y′) you need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/2032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/2032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5|x−x′|+|y−y′| minutes.

You know about the presence of https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5n celebrities in the city and you want to take photos of as many of them as possible. More precisely, for each https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2026.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5i=1,…,n, you know that the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5i-th celebrity will be at the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(xi,yi) in exactly https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5ti minutes from now (and he will stay there for a very short time, so you may take a photo of him only if at the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5ti-th minute from now you are at the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(xi,yi)). You are very good at your job, so you are able to take photos instantaneously. You know that https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/0031.png?V=2.7.5ti<ti+1 for any https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2026.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5i=1,2,…,n−1.

Currently you are at your office, which is located at the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(1,1). If you plan your working day optimally, what is the maximum number of celebrities you can take a photo of?

**Input**

The first line of the input contains two positive integers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5r,n (https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.51≤r≤500, https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.51≤n≤100,000) – the number of south-to-north/west-to-east streets and the number of celebrities.

Then https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5n lines follow, each describing the appearance of a celebrity. The https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5i-th of these lines contains https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53 positive integers https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5ti,xi,yi (https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.51≤ti≤1,000,000, https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2264.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0072.png?V=2.7.51≤xi,yi≤r)  — denoting that the https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5i-th celebrity will appear at the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0078.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0079.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(xi,yi) in https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5ti minutes from now.

It is guaranteed that https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0074.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/283/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/283/0031.png?V=2.7.5ti<ti+1 for any https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/0069.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2026.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Math/Italic/400/006E.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5i=1,2,…,n−1.

**Output**

Print a single integer, the maximum number of celebrities you can take a photo of.

**Examples**

**input**

**Copy**

10 1

11 6 8

**output**

**Copy**

0

**input**

**Copy**

6 9

1 2 6

7 5 1

8 5 5

10 3 1

12 4 4

13 6 2

17 6 6

20 1 4

21 5 4

**output**

**Copy**

4

**input**

**Copy**

10 4

1 2 1

5 10 9

13 8 8

15 9 9

**output**

**Copy**

1

**input**

**Copy**

500 10

69 477 122

73 186 235

341 101 145

372 77 497

390 117 440

494 471 37

522 300 498

682 149 379

821 486 359

855 157 386

**output**

**Copy**

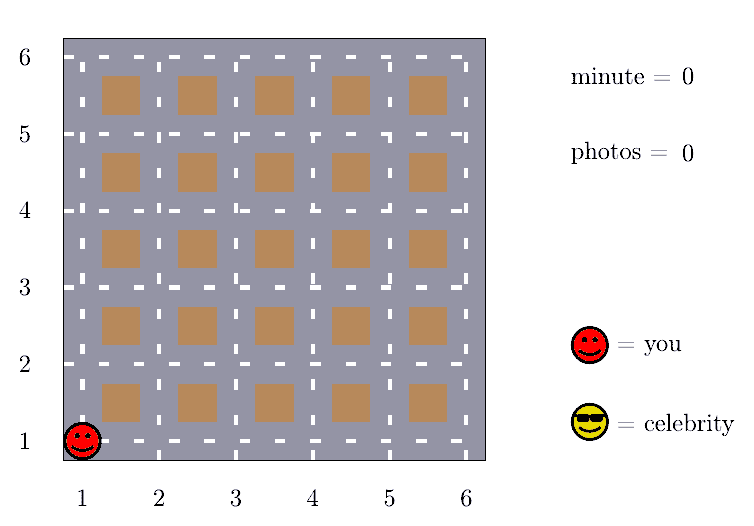
3

**Note**

**Explanation of the first testcase:** There is only one celebrity in the city, and he will be at intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(6,8) exactly https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.511 minutes after the beginning of the working day. Since you are initially at https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(1,1) and you need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5|1−6|+|1−8|=5+7=12 minutes to reach https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(6,8) you cannot take a photo of the celebrity. Thus you cannot get any photo and the answer is https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.50.

**Explanation of the second testcase:** One way to take https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.54 photos (which is the maximum possible) is to take photos of celebrities with indexes https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.53,5,7,9 (see the image for a visualization of the strategy):

* To move from the office at https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(1,1) to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(5,5) you need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5|1−5|+|1−5|=4+4=8 minutes, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.58 and you are just in time to take a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53.
* Then, just after you have taken a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53, you move toward the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(4,4). You need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5|5−4|+|5−4|=1+1=2 minutes to go there, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.58+2=10 and you wait until minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.512, when celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.55 appears.
* Then, just after you have taken a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.55, you go to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(6,6). You need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5|4−6|+|4−6|=2+2=4 minutes to go there, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.512+4=16 and you wait until minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.517, when celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.57 appears.
* Then, just after you have taken a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.57, you go to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(5,4). You need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5|6−5|+|6−4|=1+2=3 minutes to go there, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.517+3=20 and you wait until minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.521 to take a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.59.



**Explanation of the third testcase:** The only way to take https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.51 photo (which is the maximum possible) is to take a photo of the celebrity with index https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.51 (since https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5|2−1|+|1−1|=1, you can be at intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(2,1) after exactly one minute, hence you are just in time to take a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.51).

**Explanation of the fourth testcase:** One way to take https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53 photos (which is the maximum possible) is to take photos of celebrities with indexes https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.53,8,10:

* To move from the office at https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(1,1) to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(101,145) you need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5|1−101|+|1−145|=100+144=244 minutes, so you can manage to be there when the celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53 appears (at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5341).
* Then, just after you have taken a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.53, you move toward the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(149,379). You need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5|101−149|+|145−379|=282 minutes to go there, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5341+282=623 and you wait until minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5682, when celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.58 appears.
* Then, just after you have taken a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.58, you go to the intersection https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0028.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0029.png?V=2.7.5(157,386). You need https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0034.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/2212.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0033.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/007C.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5|149−157|+|379−386|=8+7=15 minutes to go there, so you arrive at minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0032.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/002B.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/003D.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0036.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0039.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0037.png?V=2.7.5682+15=697 and you wait until minute https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0038.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0035.png?V=2.7.5855 to take a photo of celebrity https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0031.png?V=2.7.5https://assets.codeforces.com/mathjax/fonts/HTML-CSS/TeX/png/Main/Regular/400/0030.png?V=2.7.510.

#include<bits/stdc++.h>

#define pb push\_back

#define pii pair<int,int>

#define int long long int

#define vec vector<int>

#define mp map<int,int>

#define inf 1e18

using namespace std;

int32\_t main()

{

ios\_base::sync\_with\_stdio(false);

cin.tie(NULL);

cout.tie(NULL);

int tt=1;

//cin>>tt;

while(tt--)

{

int r,n;

cin>>r>>n;

int a[n+1][3],i;

a[0][0]=0,a[0][1]=1,a[0][2]=1;

for(i=1;i<=n;i++)

cin>>a[i][0]>>a[i][1]>>a[i][2];

int dp[n+2];

for(i=0;i<=n;i++)

dp[i]=-inf;

dp[0]=0;

int x=0;

for(i=1;i<=n;i++)

{

for(int j=max((i-2\*r),(int)0);j<i;j++)

{

if(abs(a[i][1]-a[j][1])+abs(a[i][2]-a[j][2])+a[j][0]<=a[i][0])

dp[i]=max(dp[i],1+dp[j]);

}

if(i-2\*r>=0)

{

x=max(x,dp[i-2\*r]);

dp[i]=max(dp[i],1+x);

}

}

int ans=0;

for(i=0;i<=n;i++)

ans=max(ans,dp[i]);

cout<<ans<<"\n";

}

}