

Carreau

Description

You are given a square *carreau* of size **30x30** units as shown on the next page in Figure 1. You are required to place squares of sizes equal or smaller than **30x30** units parallel and within the *carreau*. At most one square of each size is allowed and such squares may not overlap with other squares. Squares must have integer dimensions and not all square sizes need to be used.

Question

What is the maximum number of different sized squares with the minimum empty space you can place in the *carreau*? You will be evaluated first on the number of squares you place in the *carreau* and then by the remaining empty space.

Sample Solution (for a 5x5 *carreau*, 3 squares packed with total empty space of 11)

	1	2	3	4	5
1	3	3	3	2	2
2	3	3	3	2	2
3	3	3	3	1	0
4	0	0	0	0	0
5	0	0	0	0	0

Solution Format

A **30x30** matrix representing *carreau* spots with **0** indicating no square is placed in that spot and ***n*** in the set {1, 2, ..., 30} representing the size of the square placed in that spot in a space separated **.data** or **.txt** or **.csv** file.

Figure 1 (Full Size 30x30):

