Problem L
Solar Farm
Time Limit: 1 Second, Memory Limit: 2G

You are building a new solar farm. The area in which you are allowed to build is a circular field of radius r, and the solar panels each take up a rectangular space of size $w \times h$. You must place all the panels in the same orientation of your choice in a single rectangular array (so that all of the panels combined exactly form a single rectangle). What is the maximum number of panels that you can fit in this farm?

Input

The first line of input contains a single integer T ($1 \leq T \leq 1\,000$). This is the number of test cases.

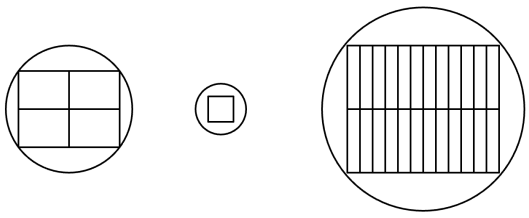
The next T lines of input each represent one test case and consist of three space-separated integers r, w, and h ($1 \leq r, w, h \leq 10^9$): the radius of the field, the width of each solar panel, and the height of each solar panel, respectively.

Output

For each test case, print a line with a single integer: the maximum number of solar panels that can be placed in a solar farm within the circular field.

Sample Explanation

The diagram below illustrates one optimal layout of solar panels for each of the three test cases in Sample Input 1 (from left to right).



Sample Input 1	Sample Output 1
3 5 4 3 2 2 2 8 1 5	4 1 24

Sample Input 2	Sample Output 2
2 500000003 1 600000010 511374200 637192506 100000000	799999999 7