Problem G – Going to the world finals again

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Baker as you know, is a smart cat, he won regionals and classified to the next cat programming World Finals. Baker is planning his trip in which he has to travel a distance of exactly X kilometers, Baker wants to travel in several days (always more than one) so he can get to know and visit more places and also avoid jetlag.

For his trip, Baker decided that the first day he will travel for d kilometers, the second day he will travel for $d + 1$, the next one $d + 2$ and so on until he arrives at his destination traveling exactly X kilometers.

Baker's owner knows how annoying is to do a lot of short trips, she wants Baker to travel the longest possible distance in the first day, so that he can have a more enjoying trip to the World Finals.

Help Baker's owner know on how many different ways her beloved cat can do his trip.

Input

The first line has an integer T ($1 \leq T \leq 200$). The next T lines contain a single integer X ($1 \leq X \leq 10^{15}$), representing the kilometers Baker should travel to get to the World Finals.

Output

For each test case in the input, print "case y: s" where y is the number of test case starting in 1, and s the number of ways in which Baker can do the trip.

Sample input 1	**Sample output 1**
3 2012 30 16	case 1: 1 case 2: 3 case 3: 0