

Problem ARMY: Army

The MI6 fears that one soldier in the British army is a spy. They (even James Bond himself) tried several times to find the spy — they know what he looks like. But it seems he is always hiding among the other soldiers. Luckily, next week there will be a military parade in honour of the Queen's birthday.

You might not know, but the British army has a funny tradition at these parades: they always form a rectangle with all soldiers, i.e. the soldiers line up in rows and columns so that the number of soldiers in each row is the same (and of course in each column respectively).

The MI6 wants to avoid that the spy is able to hide somewhere in the group again. So, not only James Bond is going undercover as a soldier to the parade but also some other agents (if necessary). It should be simple to find the spy, if the army can only form line ups with a *single* row or a *single* column according to the rules above. The soldiers always look in the same direction and we cannot recognize the spy from his back, so two rows/columns are not an option.

Input

The first line contains the number of test cases t ($1 \leq t \leq 100$). Each case is given as one integer a on a line ($1 < a \leq 10^5$), where a is the number of soldiers in the army without undercover agents.

Output

For each test case, print one line containing the number of necessary undercover agents including James Bond who will always “join” the parade.

Sample Input 1

5
7
8
42
14
999

Sample Output 1

4
3
1
3
10