

PROBLEM G**THE GEESE OF LOOWATER****10 POINTS**

Once upon a time, in the Kingdom of Loowater, a minor nuisance turned into a major problem. The shores of the Avon River in central Loowater had always been a prime breeding ground for geese. Due to the lack of predators, the geese population was out of control. The people of Loowater mostly kept clear of the geese. Occasionally, a goose would attack one of the people, and perhaps bite off a finger or two, but in general, the people tolerated the geese as a minor nuisance.



One day, a freak mutation occurred, and one of the geese spawned a multi-headed fire-breathing dragon. When the dragon grew up, he threatened to burn the Kingdom of Loowater to a crisp. Loowater had a major problem. The king was alarmed and called on his knights to slay the dragon and save the kingdom.

The knights explained: "To slay the dragon, we must chop off all its heads. Each knight can chop off one of the dragon's heads. The heads of the dragon are of different sizes. To chop off a head, a knight must be at least as tall as the diameter of the head. The knights' union demands that for chopping off a head, a knight must be paid a wage equal to one gold coin for each centimetre of the knight's height."

Would there be enough knights to defeat the dragon? The king called on his advisors to help him decide how many and which knights to hire. After having lost a lot of money building Mir Park, the king wanted to minimize the expense of slaying the dragon. As one of the advisors, your job was to help the king. You took it very seriously: if you failed, you and the whole kingdom would be burnt to a crisp!

Input

The first line of each test case contains two integers (H and K), both between 1 and 500 inclusive. H is the number of heads that the dragon has, and K is the number of knights in the kingdom.

The next H lines each contain a positive integer, and give the diameters of the dragon's heads, in centimetres. The following K lines each contain an integer, and specify the heights of the knights of Loowater, also in centimetres. H and K are both less than 2,000.

Output

Output a line containing the minimum number of gold coins that the king needs to pay for the knights to slay the dragon. If it is not possible to slay the dragon, output the line:

Loowater is doomed!

Sample Input 1

2 3
5
4
7
8
4

Output for Sample Input 1

11

Sample Input 2

2 1
5
5
10

Output for Sample Input 2

Loowater is doomed!