

# Problem I: The Bridge

The Furrloship of the Ring is a group of only the bravest kittens from Middle-earth – but unfortunately not the fastest ones. On their way to Mordor, the Furrloship of the Ring has to cross an old bridge in a dark mine. However, they cannot simply take the bridge altogether:

1. Due to its age, the bridge can carry at most  $b$  kilograms at once.
2. Since this happens in darkness, anyone crossing the bridge needs a torch to light the way to the other side.
3. They have only one torch.
4. If some group of members crosses the bridge together, then they are only as fast as the slowest of them.

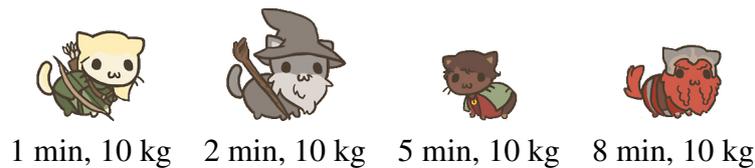


Figure I.1: The kittens in the first sample input

## Input

The input consists of:

- one line with two integers  $n$  and  $b$  ( $1 \leq n \leq 10$ ,  $1 \leq b \leq 1\,000$ ), denoting the number of group members and the weight the bridge can carry at most;
- one line with  $n$  integers  $t_1, \dots, t_n$ , where  $1 \leq t_i \leq 1\,000\,000$  is the time the  $i^{\text{th}}$  member needs to cross the bridge;
- one line with  $n$  integers  $w_1, \dots, w_n$ , where  $1 \leq w_i \leq 1\,000$  is the weight of the  $i^{\text{th}}$  member in kilograms.

## Output

Print one line with one integer, the minimum time it takes to bring all group members to the other side of the bridge. If they can not make it, print `impossible`.

### Sample Input 1

```
4 20
1 2 5 8
10 10 10 10
```

### Sample Output 1

```
15
```

### Sample Input 2

```
3 40
4 4 4
30 30 45
```

### Sample Output 2

```
impossible
```

### Sample Input 3

```
5 6
6 7 8 9 10
1 2 3 4 5
```

### Sample Output 3

```
39
```

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