# Travelers Bridge Crossing Problem

This document presents the problem of a group of travelers wishing to cross a narrow bridge with specific constraints on weight and time. The goal is to determine if all travelers can cross the bridge within a given time limit.

## Problem Description

There’s an old, narrow bridge that a group of N travelers wish to cross in the night. The bridge can only support the weight of at most 2 people. Crossers must stay together and use the group’s only flashlight while on the bridge. Traveler i can cross the bridge in S\_i seconds alone. Thankfully, the group had the foresight to bring a (very lightweight!) wheelbarrow. Either:  
- traveler i can cross the bridge alone in S\_i seconds, optionally bringing the wheelbarrow, or  
- two travelers i and j can both cross in S\_i seconds if traveler j rides in the wheelbarrow.  
  
Any group crossing the bridge must bring the flashlight. It can be returned to the initial side by the same rules above. Is there a strategy for all travelers to cross the bridge in K seconds?

## Constraints

1 ≤ T ≤ 95  
1 ≤ N ≤ 1,000  
1 ≤ S\_i, K ≤ 1,000,000,000

## Input Format

Input begins with an integer T, the number of test cases. Each case begins with a line containing the integers N and K. Then N lines follow, the i-th of which contains the integer S\_i.

## Output Format

For the i-th test case, print 'Case #i: ' followed by 'YES' if the travelers can all make it across the bridge within K seconds, or 'NO' if they cannot.

## Sample Explanation

Here’s a possible strategy for the first case. Traveler 3 can carry traveler 4 across, and then return alone. Then traveler 2 can carry traveler 3 across, and then return alone. Then traveler 1 can carry traveler 2 across. This takes 5 + 5 + 2 + 2 + 1 = 15 seconds.  
  
In the second case, there is no strategy that gets all 4 travelers across within 4 seconds.  
  
In the third case, both travelers can cross in exactly the 22 allotted seconds if they travel together.

## Sample Input

6  
4 17  
1  
2  
5  
10  
4 4  
1  
2  
5  
10  
2 22  
22  
22  
3 1000000000  
1000000000  
1000000000  
1000000000  
1 10  
12  
1 100  
12

## Sample Output

Case #1: YES  
Case #2: NO  
Case #3: YES  
Case #4: NO  
Case #5: NO  
Case #6: YES