In computer science, [rate-monotonic scheduling](https://en.wikipedia.org/wiki/Rate-monotonic_scheduling) (RMS) is a priority assignment algorithm used in real-time operating systems. Given a set of tasks, your job is to determine whether they are schedulable by checking the Liu-Layland system utilization condition.

Liu & Layland proved that for a set of periodic tasks with unique periods, there exists a feasible schedule that will always meet deadlines *if* the CPU utilization is below a specific bound which depends on the number of tasks. The schedulability test they came up with is as follows:  
https://i.gyazo.com/7983daabd86d425b9d48494f40453325.png  
where Ci and Ti are the computation time and period of the ithtask, respectively.

For the given tasks, return true if they satisfy the Liu-Layland condition and false otherwise.

**Example**

For tasks = [[1, 2], [3, 4]], the output should be  
schedulable(tasks) = false.

1 / 2 + 3 / 4 = 1.25 ≥ 0.8284..., meaning the answer is false.

**Input/Output**

* **[time limit] 6000ms (cs)**
* **[input] array.array.integer tasks**

An array of tasks with distinct periods, with each task given in the format [C, T], with C and T standing for the task's computation time and its period, respectively.

*Constraints:*  
2 ≤ tasks.length ≤ 100,  
tasks[i].length = 2,  
1 ≤ tasks[i][0] < tasks[i][1] ≤ 100.

* **[output] boolean**

Return true if the given set of tasks satisfies the Liu-Layland condition, otherwise return false.

<https://codefights.com/challenge/Wph6jWaomwnsBW6Sc?utm_source=emailNotification&utm_medium=email&utm_campaign=featuredChallenge>

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

namespace ConsoleApplication1

{

class Program

{

static bool schedulable(int[][] tasks)

{

double sum = 0;

for (int i = 0; i < tasks.Length; i++)

{

sum += ((double) tasks[i][0] / (double) tasks[i][1]);

}

int n = tasks.Length;

double x = n \* (Math.Pow(2, 1 / (double)n) - 1);

return sum <= x;

}

static void Main(string[] args)

{

int[][] tasks = { new int[]{ 1, 2 }, new int[]{ 3, 4 } };

Console.WriteLine( schedulable(tasks));

Console.ReadLine();

}

}

}