ELSEWEDY ELECTROMETER

April, 28, 2024

# Competency: ECU-SD-04-11

## Problem Solving

## Day 1:

## LO2:

### Problem B. Find Sum

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 2 seconds |
| Memory limit: | 256 megabytes |

You are given an array $A$ of $N$ integers and a target sum $T$. Print the number of subsets that sum up to $T$.

#### Input

The first line contains two integers $N$ and $T$ $(1 \leq N \leq 20)$ $(1 \leq T \leq 20000)$.

The second line contains $N$ integers $A_1, A_2, ..., A_N$ $(1 \leq A_i \leq 1000)$.

#### Output

Print one line containing the number of subsets that sum up to $T$.

#### Examples

| standard input | standard output |
|---|---|
| 5 8<br>1 5 3 7 4 | 3 |
| 9 16<br>5 1 4 2 3 1 3 10 9 | 23 |

# LO4:

## Problem D. Straight Line

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 1 second |
| Memory limit: | 256 megabytes |

Given three points on the Cartesian plane. Determine whether a single straight line can pass through these points or not.

### Input

First line contains two numbers $X_1$, $Y_1$ ($-10^5 \leq X_1, Y_1 \leq 10^5$) — indicating the first point.

Second line contains two numbers $X_2$, $Y_2$ ($-10^5 \leq X_2, Y_2 \leq 10^5$) — indicating the second point.

Third line contains two numbers $X_3$, $Y_3$ ($-10^5 \leq X_3, Y_3 \leq 10^5$) — indicating the third point.

### Output

Print 'YES' if a single straight line can pass through the three points otherwise, print 'NO'.

The output word is case insensitive.

### Examples

| standard input | standard output |
|---|---|
| 1 1<br>2 2<br>3 3 | YES |
| 0 1<br>-4 7<br>3 3 | NO |