Problem 1: The Park Problem (Section 1)

Imagine you are working on a conservation project for a large national park divided into sections to manage natural resources effectively. The park has a total area that, for simplicity, we will consider as a discrete quantitative measure, for example, 1000 hectares. The park administration has decided to divide this area into conservation zones of equal size to allocate resources and plan conservation activities in an organized manner. However, due to restrictions in the Geographic Information System (GIS), used for planning, division, and modulo operations are temporarily disabled due to a system update. The challenge is to divide the park's total area into zones of equal size without using division (/) or modulo (MOD) operators, to determine how many conservation zones can be formed and how much area would remain unassigned if an exact division is impossible.

This process is crucial for the efficient allocation of natural resources, the planning of conservation activities, and the assurance that all park areas receive the necessary attention.

Problem Summary:

The park administration has decided that each conservation zone should cover 50 hectares. With a total of 1000 hectares, they need a method to calculate how many 50-hectare zones can be formed and how many hectares would remain unassigned, all without using division or modulo operators.

Test Cases

Input (Hectares)	**Output (Complete zones Remaining area)**	**Status**
1000	**20** **0**	☐
1025	**20** **25**	☐
450	**9** **0**	☐
365	**7** **15**	☐
-450	**Error! Input must be positive**	☐

The output should contain the total number of completed zones on the first line and the remaining area on the second. For negative input, an error message must be displayed.

Problem 2: Enhancing the Kamehameha

Goku is practicing his Kamehameha technique and needs your help managing his energy levels to ensure he can unleash the most powerful blast possible. His energy is stored in an array of energy cells representing consolidated daily energy, each containing a specific amount of energy (positive, negative, or zero). Each cell represents a specific unit of consolidated energy that you can draw on daily. To prepare for the Kamehameha, he needs to identify the recommended day to perform the technique based on the highest energy level.

Your task is to develop a program that reads the array of integers, where each integer represents the accumulated daily energy. The program must identify the day to display his technique based on the maximum energy.

Restrictions

- The array may contain both positive and negative numbers. Negative values represent areas where Goku's energy is depleted.
- Days start from Sunday (0: Sunday, 1: Monday, 2: Tuesday, ..., 6: Saturday).
- Do not use accents in the output, and the days must be displayed in lowercase.

Input:

An array of 7 integers representing the daily energy of each cell.

Output:

A single integer representing the maximum energy available, followed by the corresponding day in words, with the suffix “of Kamehameha”.

Test Cases

Input	Output	Status
5 -3 7 2 -8 10 -1	10 Friday of kamehameha	☐
15 -3 7 2 -8 10 -1	15 sunday of kamehameha	☐
1 1 1	1 any day of kamehameha	☐

1 1 1 1		
-1 -1 -1 -4 -3 -5 -1	never of kamehameha	☐

Problem 3: School Book Distribution Problem

Imagine you are helping a school distribute books among classrooms for a new semester. The school has a fixed total number of books available, for example, 720 books. Ideally, each classroom should receive the same number of books to ensure fair distribution among students. However, due to a recent software update, the inventory management system has temporarily disabled division (/) and modulo (MOD) operations. The task is to determine how many classrooms can receive the same number of books, assuming that each classroom should receive 30 books. Additionally, if a perfect division is not possible, calculate how many books would remain unassigned. This information will help the school plan any additional purchases or necessary storage space for unused books.

Problem Summary:

The school needs to distribute books such that each classroom receives exactly 30 books. With a total of 720 books available, create a method to determine how many complete classrooms can be supplied and how many books would remain unassigned if an exact division is not possible, all without using division or modulo operators.

Test Cases

Input (Total books)	Output (Complete classrooms Remaining books)
720	24 0
745	24 25
150	5 0
98	3 8
-150	Error! Input must be positive

The output should contain the total number of classrooms with full allocation on the first line and the number of remaining books on the second. For negative input, display an error message.

Support Restrictions:
If needed, request assistance from the teaching assistant or professor. You have only three attempts for each problem.

Problem 4: Pikachu's Thunder Shock Charge

Pikachu is preparing for a big battle and needs your help managing his electricity levels to ensure he can unleash the strongest Thunder Shock possible. Pikachu charges his electrical energy in one battery per day of the week, distributed in an array of 7 positions. To be well-prepared, Pikachu needs to identify the day with the maximum electricity available in the stored batteries to perform his Thunder Shock.

Your task is to write a program that:

1. Read an array of integers where each integer represents the electrical energy stored in a battery for each day of the week.
2. Identify the position and value of the maximum energy in the array.
3. Display the maximum energy and the corresponding day of the week in words, adding the suffix "is a good day for a Thunder Strike."

Restrictions:

- The array may contain both positive and negative numbers. Negative numbers represent days of energy loss compared to the previous week.
- Days start on Monday (0 = Monday, 1 = Tuesday, ..., 6 = Sunday).

Input:
An array of 7 integers representing the energy in each battery daily.

Output:
A single integer representing the maximum energy Pikachu can gather, followed by the corresponding day in words with the suffix "is a good day for a Thunder Strike."

Test Cases

Entrada	Salida
5 -3 7 2 -8 10 0	10 Saturday is a good day for a Thunder Strike
15 -3 7 2 -8 10 -1	15 Monday is a good day for a Thunder Strike
1 1 1 1 1 1 1	1 Any day is a good day for a Thunder Strike

-2 -4 -5 -1 -1 -1 -10	It's never a good day for a Thunder Strike

Support Restrictions:
If needed, request assistance from the teaching assistant or professor. You have only three attempts for each problem.