[CS 11 25.1] HOPE 1 A1 – Broken Calculator 4

Cheatsheet is available here: https://oj.dcs.upd.edu.ph/cs11cheatsheet/

Problem Statement

Oh no, Yuuka's calculator is broken again!

Instead of having trouble with odd and even numbers, Yuuka's calculator is having trouble with *signs*. When given n integers $a_1, a_2, \cdots, a_n$ to add, Yuuka's calculator will negate **at most one** of the given integers before getting their sum.

Given $a_1, a_2, \cdots, a_n$, determine all possible sums you can get.

Task Details

Your task is to implement a function named `possible_sums`. This function must accept a **varying** number of parameters; each parameter is an integer denoting one of the numbers you want to add.

The function must return a `frozenset` of integers denoting all possible sums you can get.

Restrictions

- Recursion is **disallowed**.
- Your source code must have at most 250 bytes.

Examples

Example 1 Function Call

```
possible_sums(1, 2, 3)
```

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Example 1 Return Value

```
frozenset((6, 4, 2, 0))
```

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Example 1 Explanation

The possible sums are obtained as follows:

- $1 + 2 + 3 = 6$ (no numbers negated)
- $(-1) + 2 + 3 = 4$ (1 is negated)
- $1 + (-2) + 3 = 2$ (2 is negated)
- $1 + 2 + (-3) = 0$ (3 is negated)

Constraints

- The function `possible_sums` will be called at most $70{,}000$ times.
- $1 \le n \le 350{,}000$
- The sum of the ns across all test cases is at most $350{,}000$.
- Each number in the sum has absolute value at most 10^{10}.

Scoring

Note: New tests may be added and all submissions may be rejudged at a later time. (All future tests will satisfy the constraints.)

- You get 25 ❤️ points if you solve all test cases where:
  - All inputs given to the calculator are either x or $-x$, for some positive integer x.
- You get 75 🔴 points if you solve all test cases where:
  - $n \le 100$
  - The sum of the ns across all test cases is at most 300.
- You get 50 🔴 points if you solve all test cases.

Submit solution [CS 11 25.1] HOPE 1

My submissions

Points: 150 (partial)
Time limit: 12.0s
Memory limit: 2G

Problem type

Allowed languages
py3

Clarifications

Report an issue

No clarifications have been made at this time.