

Problem A. Amount

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

Find the amount of natural numbers from 1 to N with sum of digits divisible by 4.

Input

One integer number - N.

Output

One integer number.

Example

standard input	standard output
25	5

Problem B. Array

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 64 megabytes

Given an array of integers. Print all integers $a[i]$ such that $a[i]$ is divisible by X and not divisible by Y , where $1 \leq a[i] \leq N \leq 100000$. If there is no number, print -1.

Input

First line one integer - N , size of array. Next N lines - integers, elements of array. Last line two integer numbers - X and Y .

Output

List of integers.

Examples

standard input	standard output
2 9587 2393 2 769	-1
10 5728 2947 6439 9350 5543 2417 1225 4203 1719 3982 4 354	5728

Problem C. 56242.ASCII

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 64 megabytes

Given N chars, find the sum of the ASCII codes of this chars.

Input

First line contains one integer number - N. Next N lines contain chars. ($1 \leq N \leq 1000000$)

Output

One integer number.

Examples

standard input	standard output
5 u l u e c	542
2 a b	195

Problem D. Checker

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 64 megabytes

Given string A, B and C. Print chars from 'a' to 'z' which not appeared in strings.

Input

Three strings with letters in range 'a' .. 'z'.

Output

Letters in ascending order.

Examples

standard input	standard output
twnwdu xfilson vlwphhj	abceghkmqryz
llbxoyk eriuqtx icrmrdp	afghjnsvwz

Problem E. Common strings

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

You are given strings A , B and C . Print all common chars of these strings in lexicographical without repetition.

Input

strings A, B, C strings can contain any chars from 'A' to 'Z', 'a' to 'z' and '0' to '9'.

Output

all common chars

Examples

standard input	standard output
kbtu fit forevert	t
programming competition problems	mop

Problem F. Chars

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

Given string A which contains only lower case letters. Replace all consequence chars from english alphabet with number of consequence chars. For example, “absolute” => “2solute”, “abcrdefg”=>”3f3” , “result”=>”result”

Input

String A

Output

Result of the program

Examples

standard input	standard output
absolute	2solute
abcrdefg	3r4

Problem G. Descending order

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

You are given two integer numbers N , K . Find all divisors of number N and store them in vector (or array). Sort these numbers in descending order. Print Kth from beginning.

Input

two integer numbers N , K

Output

Print Kth from beginning

Example

standard input	standard output
17 2	1

Problem H. Length

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

Given radius of the circle. Find length of the circle with precision 6 digits.

Input

One integer number.

Output

One double number with precision 6 digits.

Examples

standard input	standard output
1	6.283185
4	25.132741

Problem I. Quiz

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 64 megabytes

You are given the result of quizzes for PP1 (each quiz costs 10 points). Your task is determine who passed to exam. During the course, each student should pass 4 kind of quizzes: Q1, Q2, Q3 and Q4. Student will pass to exam if he gathered at least 20 points for $Q1+Q2+Q3+Q4$.

Sometimes instructor gives some extra points (half score from quiz score) for quiz if more than half of students can't pass this quiz (0 points for quiz). Your task is to print who passed to exam in descending order by $Q1+Q2+Q3+Q4$, if several students has same points print out them in lexicographical order.

Input

First line contains number of students in PP1 N .

Each following line contains name, surname and results of quizzes of students (4 numbers for each quiz).

Output

Print surname of students, who passed to exam in descending order by $Q1+Q2+Q3+Q4$, if several students has same points print out them in lexicographical order.

Examples

standard input	standard output
8 fyjro kqpxq 2 5 1 7 nvxyl wayeu 9 1 7 1 sjugq ktcdi 2 0 7 0 barmo mljil 6 8 3 4 hytxt ldlfl 1 2 7 7 dgfbd rzbad 9 9 0 3 hpgox vuspe 4 6 2 9 trsaa uwjha 6 10 10 5	uwjha mljil rzbad vuspe
4 pebxl dqkvw 0 6 5 0 kxkam gmvti 0 6 3 0 etxll auyum 0 4 5 0 qhvse dcovq 0 5 2 0	dqkvw

Problem J. Squares 2

Input file: `standard input`
Output file: `standard output`
Time limit: 2 seconds
Memory limit: 64 megabytes

Please compute the sum of squares for the between integer numbers A and B.

Input

Two integer numbers.

Output

One integer number.

Examples

standard input	standard output
1 3	14
1 11	506