

- A. Testrun
- B. again
- C. lisp_plus_plus
- D. asteroids
- E. gas_stations

Contest Analysis

Questions asked 3

Submissions

Testrun	
0pt	Not attempted 0/74 users correct (0%)
again	
1pt	Not attempted 401/409 users correct (98%)
14pt	Not attempted 368/399 users correct (92%)
lisp_plus_plus	
3pt	Not attempted 390/399 users correct (98%)
17pt	Not attempted 355/385 users correct (92%)
asteroids	
5pt	Not attempted 283/305 users correct (93%)
25pt	Not attempted 91/170 users correct (54%)
gas_stations	
8pt	Not attempted 191/233 users correct (82%)
27pt	Not attempted 28/95 users correct (29%)

Top Scores

eatmore	100
Marcin.Smulewicz	100
tozangezan	100
Errichto.rekt	100
mnbvmar	100
qwerty787788	100
sevenkplus	100
tczajka	100
fhlasek	100
wata	100

Problem E. gas_stations

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

small 8 points 2 minute timeout	The contest is finished.
large 27 points 10 minute timeout	The contest is finished.

Problem

Gas Stations

You are about to embark on the road trip of a lifetime, covering millions or even billions of kilometers! Of course, gas for such a long trip can get really expensive, and you are on a budget, so you should plan ahead. Fortunately, the road you are taking has a lot of gas stations: there is one at your starting point, one every kilometer thereafter. There is no gas station at your ending point (not that it would do you any good).

Different gas stations may charge different prices per liter of gas. Your car is really old, so it can run for exactly 1 kilometer with 1 liter of gas. You can never have more liters of gas than the tank can hold, but you can add gas to the tank at any station; you do not need to wait for the tank to be empty. Each time you advance a kilometer, your tank's contents are reduced by 1 liter. It is OK if the tank becomes empty exactly at the end of your trip or exactly as you reach a gas station (in which case you can add gas there).

Given the length of your route, the size of your tank and the price per liter of each station, what is the minimum amount of money you need to complete your trip? Your starting point is exactly at the station at the 0 kilometer mark, and your tank starts empty.

Input

The input library is called "gas_stations"; see the sample inputs below for examples in your language. It defines three methods:

- **GetNumKms():**
 - Takes no argument.
 - Returns a 64-bit integer: the total length in kilometers of your trip.
 - Expect each call to take 0.15 microseconds.
- **GetTankSize():**
 - Takes no argument.
 - Returns a 64-bit integer: the maximum amount of liters of gas you can have in your tank.
 - Expect each call to take 0.15 microseconds.
- **GetGasPrice(i):**
 - Takes a 64-bit integer in the range $0 \leq i < \text{GetNumKms}()$.
 - Returns a 64-bit integer: the price of each liter of gas in the station exactly i kilometers from your starting point.
 - Expect each call to take 0.15 microseconds.

Output

Output a single line with a single integer: the minimum amount of money you need to pay for all the gas necessary for your trip.

Limits

Time limit: 5 seconds.
Memory limit per node: 128 MB.
Maximum number of messages a single node can send: 1000.
Maximum total size of messages a single node can send: 8 MB.
 $1 \leq \text{GetTankSize}() \leq \text{GetNumKms}()$.
 $1 \leq \text{GetGasPrice}(i) \leq 10^9$, for all i.

Small dataset

Number of nodes: 10.
 $1 \leq \text{GetNumKms}() \leq 10^6$.

Large dataset

Number of nodes: 100.
 $1 \leq \text{GetNumKms}() \leq 5 \times 10^8$.

Sample

Input	Output
See input files below.	For sample input 1: 7 For sample input 2: 7 For sample input 3: 11

Sample input libraries:

Sample input for test 1: [gas_stations.h](#) [CPP] [gas_stations.java](#) [Java]

Sample input for test 2: [gas_stations.h](#) [CPP] [gas_stations.java](#) [Java]

Sample input for test 3: [gas_stations.h](#) [CPP] [gas_stations.java](#) [Java]

All problem statements, input data and contest analyses are licensed under the [Creative Commons Attribution License](#).

© 2008-2017 Google [Google Home](#) - [Terms and Conditions](#) - [Privacy Policies and Principles](#)

Powered by



Google Cloud Platform