Problem: Coins and Energy

There are numerous houses in a line, numbered from *0*, which Alex can visit. Each house has its own amount of energy supply and coins supply. Alex starts the journey at house *0*. At each house visited, Alex either takes the entire energy from this house (for increasing own energy) or takes all coins from this house (to get rich), but cannot take both energy and coins from one house. Traveling from a house with number i to a house with number $i+1$ costs *1* energy unit and it's not possible to skip any house in between which means that before visiting the house with number i, Alex has to visit houses *0, 1, 2, ..., i-1* first. Alex can end the journey at any house, since it is not required to visit all the houses.

Assuming that there are n houses in a line, the i^{th} house has *house_energy[i]* energy and *house_coins[i]* coins, and Alex starts the journey with *initial_energy* energy, what's the maximum number of coins Alex can collect maintaining the condition of always having non-negative energy?

For example, given $n = 3$ houses, *initial_energy = 0* and having *house_energy[] = {2, 1, 1}* and *house_coins[] = {11, 5, 7}*. The best possible way is to take energy from first house and coins from the second and third house, hence at the end ending up with a total of *12* Coins.

Function Description

Complete the function *getRich* in the editor below. The function must return an integer stating the maximum number of coins that can be collected.

getRich has the following parameter(s):

initial_energy: long integer
*house_energy [*house_energy*[0]*,...house_energy*[n-1]]:* an array of integers
*house_coins [*house_coins*[0]*,...house_coins*[n-1]]:* an array of integers

Constraints

- $1 \leq n \leq 1000$
- $0 \leq initial\_energy \leq 10^{14}$
- $0 \leq house\_energy \leq 10^{3}$
- $0 \leq house\_coins \leq 10^{3}$