CodeVita
The TCS Global Coding Contest

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A B C D E F

ONLINE EDITOR (E)

Home Lighting

Problem Description

You are moving to a new apartment and want to plan your total lighting cost for the next 2 years which includes the cost of bulb procurement and cost of electricity consumption. Three types of bulbs are available in the market.

1. Regular bulbs, which cost C1, have a warranty of M1 hours, and have a running cost of R1 per hour
2. CFL bulbs, which cost C2, warranty M2 hours, running, cost R2 per hour
3. LED bulbs, which cost C3, warranty M3 hours, running cost R3 per hour

C1 < C2 < C3 and R1 > R2 > R3, nothing can be said about M1, M2, and M3.

You have a plan for 1 bulb in the kitchen at H1 hours per day, 2 bulbs per room across 3 rooms at H2, H3, H4 hours per day per room per bulb, 1 bulb for bathroom at H5 hours per day.

When you prepare your budget, assume that it will last only until the warranty period.

Given the above requirements, come up with a bulb procurement plan that incurs least cost over 2 years - where cost includes procurement and running cost. In case warranty expires, in your model assume that the bulb will need to be replaced. Also, assume that you will move out after 2 years, and so you are not concerned about stretching the life of bulbs beyond that time.

Assume that there are 365 days in each year.

Constraints

C1 < C2 < C3

R1 > R2 > R3

0<= Fixed Cost <=1000

0<= Warranty<=30000

0<= Running cost <= 150

0<= H1,H2,H3,H4,H5<=24

Input Format

The first three lines contains three integers denoting Fixed cost, Warranty and running cost of regular bulb, CFL and LED respectively.

The next five lines contain one integer each denoting usage hours of rooms (H1, H2, H3, H4, H5)

Output

Minimum cost to light the house.

Test Case

Explanation

Example 1

Input

50 1500 16

100 8000 14

400 25000 1

1

2

8

14

2

Output

38500

Explanation

Minimum cost for meeting all the lighting requirement of house is 38500.

Example 2

Input

50 10000 16

100 8000 14

800 25000 1

2

6

10

8

1

Output

41960

Explanation

Minimum cost for meeting all the lighting requirement of house is 41960.

Upload Solution [Question : E]

☐ I, **Christian** confirm that the answer submitted is my own.

☐ Took help from online sources (attributions)

Choose a File ...