# Linear functions

(Time Limit: 1 second)

**Problem Description**

There are n linear functions f\_i(x)=a[i]x+b[i], 1<= i <=n. Define F(x)=max{f\_i(x) : 1<= i <=n}. Given m x-values c[1],c[2],…, c[m], please compute the sum of all F(c[j]), i.e., F(c[1])+ F(c[2])+…+ F(c[m]).

**Technical Specification**

* + The number of test cases is at most 5.
  + n<45 000 and m<=10 000.
  + a[i], b[i], and c[i] are 32-bits integer. The result is a 64-bits integer.

**Input Format**

The test file contains several test cases. The first line of a test case contains n and m. The following n lines are a[i] and b[i] for i from 1 to n. The last line contains the m integers c[1],c[2],…,c[m]. The case n=0 indicates the end of the input, and you do not need to proceed it.

**Output Format**

For each test case, output the result in one line.

**Example**

|  |  |
| --- | --- |
| **Sample Input:** | **Sample Output:** |
| 4 5  -1 0  1 0  -2 -3  2 -3  -5 -1 0 2 4  0 0 | 15 |