

Contest Duration: 2023-05-20(Sat) 09:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20230520T2100&p1=248>) - 2023-05-20(Sat) 10:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20230520T2240&p1=248>) (local time) (100 minutes)

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D - Impartial Gift

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Time Limit: 2 sec / Memory Limit: 1024 MB

Score : 400 points

Problem Statement

Takahashi has decided to give **one** gift to Aoki and **one** gift to Snuke.

There are N candidates of gifts for Aoki, and their values are A_1, A_2, \dots, A_N .

There are M candidates of gifts for Snuke, and their values are B_1, B_2, \dots, B_M .

Takahashi wants to choose gifts so that the difference in values of the two gifts is at most D .

Determine if he can choose such a pair of gifts. If he can, print the maximum sum of values of the chosen gifts.

Constraints

- $1 \leq N, M \leq 2 \times 10^5$
- $1 \leq A_i, B_i \leq 10^{18}$
- $0 \leq D \leq 10^{18}$
- All values in the input are integers.

Input

2023-05-30 (Tue)
16:34:14 -03:00

The input is given from Standard Input in the following format:

$$\begin{matrix} N & M & D \\ A_1 & A_2 & \dots & A_N \\ B_1 & B_2 & \dots & B_M \end{matrix}$$

Output

If he can choose gifts to satisfy the condition, print the maximum sum of values of the chosen gifts. If he cannot satisfy the condition, print -1 .

Sample Input 1

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```
2 3 2
3 10
2 5 15
```

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Sample Output 1

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```
8
```

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The difference of values of the two gifts should be at most 2.

If he gives a gift with value 3 to Aoki and another with value 5 to Snuke, the condition is satisfied, achieving the maximum possible sum of values.

Thus, $3 + 5 = 8$ should be printed.

Sample Input 2

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```
3 3 0
1 3 3
6 2 7
```

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Sample Output 2

[Copy](#)

```
-1
```

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He cannot choose gifts to satisfy the condition. Note that the candidates of gifts for a person may contain multiple gifts with the same value.

Sample Input 3

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C++ (GCC 9.2.1)

1

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