

# Flipping Cards

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            3 seconds  
Memory limit:         256 megabytes

Proofy with playing with  $n$  cards numbered from 1 to  $n$ . The  $i$ th card has the value  $a_i$  on its front face and the value  $b_i$  at its back face.

Now, Proofy places the cards on the table with their front faces up. He can flip **at most**  $k$  cards (choose at most  $k$  cards and make their back faces up). Afterward, he looks at the table from above and calculates the sum of values appearing face-up on the cards.

Find the maximum sum that Proofy can achieve.

## Input

The first line of input contains an integer  $t$  ( $1 \leq t \leq 10^4$ ), the number of test cases.

The first line of each test case contains two integers  $n$  and  $k$  ( $1 \leq k \leq n \leq 10^5$ ), the number of cards, and the maximum number of cards that can be flipped.

The second line of each test case contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ), the values displayed on the front faces of the cards.

The third line of each test case contains  $n$  integers  $b_1, b_2, \dots, b_n$  ( $1 \leq b_i \leq 10^9$ ), the values displayed on the back faces of the cards.

The sum of  $n$  over all test cases doesn't exceed  $5 \cdot 10^5$ .

## Output

For each test case, output one line containing one integer, the maximum sum Proofy can achieve by flipping at most  $k$  cards.

Please note, that the answer for some test cases won't fit into 32-bit integer type, so you should use at least 64-bit integer type in your programming language (like `long long` for C++).

## Scoring

**Group 1:** (10 points)

$1 \leq k \leq n \leq 10$ .

**Group 2:** (20 points)

$1 \leq k \leq n \leq 2000$ , the sum of  $n$  over all test cases doesn't exceed 10000.

**Group 3:** (70 points)

No additional constraints.

## Example

standard input	standard output
3	26
4 4	26
1 2 3 4	35
5 6 7 8	
4 3	
5 6 7 8	
1 2 3 4	
5 3	
8 7 1 5 3	
9 8 6 9 5	

## Note

In the first test case, Proofy can - and it will be optimal - to flip all cards; so, the answer will be  $5 + 6 + 7 + 8 = 26$ .

In the second test case, Proofy - while he can flip **at most 3** - will not need to flip any cards; so, the answer will be  $5 + 6 + 7 + 8 = 26$ .

In the third test case, it is optimal to flip the last three cards (since he can flip at most 3). So, the answer will be  $8 + 7 + 6 + 9 + 5 = 35$ .