Hello, **2024101067**.

Light Yagami Shopping Spree

Submit solution

All submissions
Best submissions

Points: 100 (partial)
Time limit: 2.0s
Memory limit: 256M

Allowed languages
C

Light Yagami, a strategic shopper, wants to purchase N items with the least amount of money possible. Each item has a price in yen (Japan's currency), denoted by A_i for the i^{th} item.

Light has the advantage of M discount tickets. These tickets offer a special discount when used for a purchase. For each item, Light can use any number of his remaining discount tickets (Y tickets used) to get the item at a discounted price. The discount works by dividing the original price (X yen) by 2 raised to the power of the number of tickets used $(X \ / \ 2^Y)$, rounded down to the nearest integer.

Your challenge is to determine the minimum total amount of money Light Yagami needs to spend to buy all N items using his available discount tickets (M) strategically.

Input Format

`N M` the first line contains two integer: **N** which is the number of items Light Yagami is going to buy one by one and **M** is the discount tickets Light has, and he can use any number of them when buying an item.

`a[1] a[2].... a[N]` the second line consists of N integer which is the price of the i^{th} item Light buys.

Output Format

Output a single integer `m` which is the minimum amount of money required to buy all the items.

Constraints

$1 <= N, M <= 1e5$

$1 <= a[i] <= 1e9$

```
3 3
2 13 8
```

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Output:

```
9
```

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Clarifications

Request clarification

No clarifications have been made at this time.