

# Token (Easy)

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**Time Limit:** 1.0s    **Memory Limit:** 256M

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*This problem is the easy version of the Token (Hard) problem. The easy version of the problem doesn't have the variable  $\mathbf{K}$ .*

Ada wants to buy  $\mathbf{N}$  different kinds of products. She is going to buy  $i$ 'th product  $\mathbf{a}_i$  times. The owner of the wholesale store offers Ada, a great plan. Here's the plan:

The store owner gives Ada  $2^{\mathbf{N}}$  points. Ada will choose the unit price of each product, and it will be a positive integer. Selecting  $\mathbf{X}$  ( $1 \leq \mathbf{X} \leq \mathbf{N}$ ,  $\mathbf{X} \in \mathbb{Z}^+$ ) as the unit price for a product, will cost Ada  $2^{(\mathbf{N}-\mathbf{X})}$  points. Ada can use her points as she wishes, provided that these rules are followed.

What is the minimum total cost Ada should pay to buy all the products she needs?

## Input

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- The first line contains 1 integer:
  - $2 \leq \mathbf{N} \leq 10^5$  (Number of different kinds of products Ada wants to buy)
- The second line contains  $\mathbf{N}$  integers:
  - $1 \leq \mathbf{a}_i \leq 10^5$  (Amount of product  $i$  Ada wants to buy)

## Output

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1 positive integer (minimum price to pay)

## Example

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Input:

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7
3 10 3 5 21 8 15
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Output:

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165
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## Explanation

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- Ada has a total of  $2^7 = 128$  points.
  - unit price for 1st product( $a_i = 3$ ) was chosen as 4.  $2^{7-4} = 8$  points has been used. 120 left.
  - unit price for 2nd product( $a_i = 10$ ) was chosen as 3.  $2^{7-3} = 16$  points has been used. 104 left.
  - unit price for 3rd product( $a_i = 3$ ) was chosen as 4.  $2^{7-4} = 8$  points has been used. 96 left.
  - unit price for 4th product( $a_i = 5$ ) was chosen as 3.  $2^{7-3} = 16$  points has been used. 80 left.
  - unit price for 5th product( $a_i = 21$ ) was chosen as 2.  $2^{7-2} = 32$  points has been used. 48 left.
  - unit price for 6th product( $a_i = 8$ ) was chosen as 3.  $2^{7-3} = 16$  points has been used. 32 left.
  - unit price for 7th product( $a_i = 15$ ) was chosen as 2.  $2^{7-2} = 32$  points has been used. 0 left.
- $3 \cdot 4 + 10 \cdot 3 + 3 \cdot 4 + 5 \cdot 3 + 21 \cdot 2 + 8 \cdot 3 + 1 \cdot 2 = 165$