

Problem J. Junkyeom's Contest

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 1024 mebibytes

Junkyeom and his friends Myung and Myeong are planning to hold a programming contest with one gold (first place), two silver (places 2 and 3), and four bronze medals (places 4, 5, 6, 7).

The sponsors gave N gift cards for the contest, i -th of them costs A_i . Each medalist shall be awarded exactly one card. Let P_i be the prize for the card awarded to the contestant taking i -th place. The distribution is considered *fair* if the following two inequalities are held:

$$P_1 \geq P_2 \geq P_3 \geq P_4 \geq P_5 \geq P_6 \geq P_7$$

and

$$P_1 < P_2 + P_3 < P_4 + P_5 + P_6 + P_7.$$

Given the values A_i , find out if a fair distribution of prizes exists. If it does, print the maximum possible sum of P_i for a fair distribution.

Input

The first line of input contains one integer N , the number of gift cards ($7 \leq N \leq 5 \cdot 10^5$).

The second line contains N integers A_i : the prizes for the cards ($1 \leq A_i \leq 2 \cdot 10^8$).

Output

If a fair distribution of prizes is impossible, print -1 .

Otherwise print one integer: the maximum possible total prize of the fairly distributed gift cards.

Examples

standard input	standard output
7 1 2 3 4 5 6 7	-1
8 1 2 3 4 5 6 7 8	35
10 5 5 5 5 5 5 10 5 5 5	35