

Little Bob is given with n marbles. He arranges them in a sequence arbitrarily. And numbers them sequentially $(1, 2, 3, \dots, n$ or $n, n - 1, n - 2, \dots, 1)$. Once he sets such numbering, he can break the sequence into more sequences where the relative ordering should be kept intact within a sequence. Well, now comes the real assignment for him. He has to separate the odd numbered marbles from even numbered ones. To make things worse, he has been put into more constraints. He has to maintain the number of sequences less than 4. At any instance, he is allowed to move only one of the marbles from the right of a sequence to the right of another sequence (which can be empty). Can he make his way ? Surely he can :D. Then he has to do it in minimum number of moves.

Little Bob is too little to do this, can you please help him?

Input

The first line tells the number of inputs $T < 101$. Then follows T lines each of which is an integer $n < 66$.

Output

Output contains T lines, each of which is the minimum number of moves for the corresponding n .

Sample Input

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2
3
15
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Sample Output

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3
14043
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