

1 Money Change Again

As we already know, a natural greedy strategy for the change problem does not work correctly for any set of denominations. For example, if the available denominations are 1, 3, and 4, the greedy algorithm will change 6 cents using three coins ($4 + 1 + 1$) while it can be changed using just two coins ($3 + 3$). Your goal now is to apply dynamic programming for solving the Money Change Problem for denominations 1, 3, and 4.

Problem Description

Input Format. Integer *money*.

Output Format. The minimum number of coins with denominations 1, 3, 4 that changes *money*.

Constraints. $1 \leq \textit{money} \leq 10^3$.

Sample 1.

Input:

2

Output:

2

$2 = 1 + 1$.

Sample 2.

Input:

34

Output:

9

$34 = 3 + 3 + 4 + 4 + 4 + 4 + 4 + 4 + 4$.

Need Help?

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