Honeycomb Walk

A bee larva living in a hexagonal cell of a large honeycomb decides to creep for a walk. In each step the larva may move into any of the six adjacent cells and after n steps, it is to end up in its original cell. Your program has to compute, for a given n, the number of different such larva walks.

Input

The first line contains an integer giving the number of test cases to follow. Each case consists of one line containing an integer n, where $1 \leq n \leq 14$.

Output

For each test case, output one line containing the number of walks. Under the assumption $1 \leq n \leq 14$, the answer will be less than 2^{31}.

Sample Input 1	Sample Output 1
2 2 4	6 90