

Problem B: Extra Homework

Filename: homework

Timelimit: 1 second

Your math teacher is currently going over polynomials in their Algebra I course. Moreover the topic is on polynomials with integral coefficients. There are many rules to help find intervals and potential roots for said polynomials. They are obsessed with finding roots of polynomials. However, finding the roots of fourth degree polynomials require large and complex radicals, and it is provably impossible to find roots for fifth degree polynomials using radicals.

To help alleviate some stress for your teach you volunteered yourself to write a checker for your teacher. You will be given a description of a polynomial of 4th degree or less and a potential integer root. Your job will be to output the value of the function at the given value.

Input

The first line of input will contain a single positive integer t ($t \leq 50$), representing the number of input cases.

Each case will consist of 6 space separated integers, a , b , c , d , e , and x , ($|a|, |b|, |c|, |d|, |e|, |x| \leq 50$), respectively, describing the polynomial and the test point.

Output

For each case output a single integer $f(x) = ax^4 + bx^3 + cx^2 + dx + e$.

Samples

Input	Output
4	1
0 0 0 0 1 3	0
0 0 0 1 -3 3	0
1 -49 -49 -49 -50 50	-196
1 -49 -49 -49 -50 1	