



The 41th ACM-ICPC Asia Pyongyang Regional Contest



Problem 3. Checking Matrix

Time Limit : 1 second
Memory Limit : 512 megabytes

Description

Prof. Jong is a problem setter of the 41th ACM-ICPC Asia Pyongyang Regional Contest.

He has just finished calculating the 100 sets of the multiplication of 2016×1946 matrix and 1946×2016 matrix.

Of course, the results are 2016×2016 matrix.

The calculating takes about 10 days. The result will become the 100 sets IO data of problem C.

After Prof. Jong went to bed, his son scribbled on the result.

He erased last digit of a number and then wrote the digit 1 on the erased position.

Next day, Prof. Jong became very angry.

But his son is only 2 years old, so he can't remember all.

Prof. Jong see the result with detail and talk with his son.

So he get some fact that his son scribbled at most one number for each set and the last digit of scribbled number was 2 or 0 or 1 or 6. And he found out that the row number and column number of scribbled position is less than or equal to 70.

The upper left corner of the matrix is (1, 1). The first id is row number and the second id is column number.

He must send the IO data in today.

So he decide to check the result and find out the changed result.

You are his best student.

Please help Prof. Jong.

Input

The input file contains exactly 100 sets of IO data.



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Each set is described as follow;

The first line contains 5 integers a_1, a_2, a_3, a_4, a_5 .

You can calculate the matrix A as follow;

$$A_{ij} = (a_1 * i^4 + a_2 * i^3 + a_3 * j^2 + a_4 * j + a_5) \% 1946002016$$

The second line contains 5 integers b_1, b_2, b_3, b_4, b_5 .

You can calculate the matrix B as follow;

$$B_{ij} = (b_1 * i^4 + b_2 * i^3 + b_3 * j^2 + b_4 * j + b_5) \% 1946002016$$

And then there are 70*70 integer matrix which is the left top region of the result matrix.

You must check this matrix.

When you multiply two matrix, all number of matrix must be modulo by 2016011010.

Output

You must output which IO set is changed by son.

The ID of IO set is from 1 to 100.

Your output must be sorted by increasing order and separated by one white space.

If all IO set is not changed then print 0.

Sample Input and Output

IO data is too large so that we can't show you any sample input and output.

You can guarantee that the IO data format is valid.