import java.io.\*;

public class Problem3

{

public static void main(String[] args) throws IOException

{

FileReader file = new FileReader("DATA32.txt");

BufferedReader read = new BufferedReader(file);

for (int a = 0;a<10;a++)

{

String line = read.readLine();

String array[] = line.split(" ");

boolean match = true;

int wrongs = 0;

int n = Integer.parseInt(array[0]);

int x = Integer.parseInt(array[1]); // even increasing

int y = Integer.parseInt(array[2]); // odd subtract

int z = Integer.parseInt(array[3]); // zero sets

line = read.readLine();

int size = line.length();

String codesX[][] = new String[n][size];

int codes[][] = new int[n][size];

String q[] = new String[n];

for (int i = 0;i<n;i++)

{

String row = "";

codesX[i] = line.split("");

for (int j=0;j<size;j++)

{

codes[i][j] = Integer.parseInt(codesX[i][j]);

if (codes[i][j] == 0)

codes[i][j] = z;

else if (codes[i][j] % 2 == 0)

codes[i][j] += x;

else

{

codes[i][j] -= y;

if (codes[i][j] < 0)

codes[i][j] = 0;

}

row+=codes[i][j];

}

q[i] = row;

line = read.readLine();

}

String answers[] = new String[n];

for (int i = 0; i < n; i++)

{

answers[i] = read.readLine();

if (!answers[i].equals(q[i]))

{

match = false;

wrongs += 1;

}

}

int wrong[] = new int[wrongs];

int counter = 0;

for (int i = 0; i < n; i++)

{

if (!answers[i].equals(q[i]))

{

wrong[counter] = i;

counter++;

}

}

counter = 0;

if (match)

System.out.println("MATCH");

else

{

System.out.print("FAIL: ");

for (int i = 0; i<wrong.length;i++)

{

if (counter == 0)

{

System.out.print(wrong[i]+1);

counter++;

}

else

{

System.out.print("," + (wrong[i]+1));

}

}

System.out.print("\n");

}

read.readLine();

}

read.close();

}

}