565 Pizza Anyone?

You are responsible for ordering a large pizza for you and your friends. Each of them has told you what he wants on a pizza and what he does not; of course they all understand that since there is only going to be one pizza, no one is likely to have all their requirements satisfied. Can you order a pizza that will satisfy at least one request from all your friends?

The pizza parlor you are calling offers the following pizza toppings; you can include or omit any of them in a pizza:

Input Code	**Topping**
A	Anchovies
B	Black Olives
C	Canadian Bacon
D	Diced Garlic
E	Extra Cheese
F	Fresh Broccoli
G	Green Peppers
H	Ham
I	Italian Sausage
J	Jalapeno Peppers
K	Kielbasa
L	Lean Ground Beef
M	Mushrooms
N	Nonfat Feta Cheese
O	Onions
P	Pepperoni

Your friends provide you with a line of text that describes their pizza preferences. For example, the line

```
+O-H+P;
```

reveals that someone will accept a pizza with onion, or without ham, or with pepperoni, and the line

```
-E-I-D+A+J;
```

indicates that someone else will accept a pizza that omits extra cheese, or Italian sausage, or diced garlic, or that includes anchovies or jalapenos.

Input

The input consists of a series of pizza constraints.

A pizza constraint is a list of 1 to 12 topping constraint lists each on a line by itself followed by a period on a line by itself.

A topping constraint list is a series of topping requests terminated by a single semicolon.

An topping request is a sign character `(+/-)` and then an uppercase letter from `A` to `P`.

Output

For each pizza constraint, provide a description of a pizza that satisfies it. A description is the string "`Toppings: `" in columns 1 through 10 and then a series of letters, in alphabetical order, listing the toppings on the pizza. So, a pizza with onion, anchovies, fresh broccoli and Canadian bacon would be described by:

```
Toppings: ACFO
```

If no combination toppings can be found which satisfies at least one request of every person, your program should print the string

```
No pizza can satisfy these requests.
```

on a line by itself starting in column 1.

Sample Input

```
+A+B+C+D-E-F-G-H;
-A-B+C+D-E-F+G+H;
-A+B-C+D-E+F-G+H;
.
+A+B+C+D;
+E+F+F+H;
+A+B-G;
+O+J-F;
+H+I+C;
+P;
+O+M+L;
+M-L+P;
.
+A+B+C+D;
+E+F+F+H;
+A+B-G;
+P-O;
+O+J-F;
+H+I+C;
+P;
+O;
+O+M+L;
-O-P;
+M-L+P;
.
```

Sample Output

```
Toppings:
Toppings: CELP
No pizza can satisfy these requests.
```