

D. Rat Kwesh and Cheese

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Wet Shark asked Rat Kwesh to generate three positive real numbers x, y and z , from 0.1 to 200.0 , inclusive. Wet Krash wants to impress Wet Shark, so all generated numbers will have **exactly one** digit after the decimal point.

Wet Shark knows Rat Kwesh will want a lot of cheese. So he will give the Rat an opportunity to earn a lot of cheese. He will hand the three numbers x, y and z to Rat Kwesh, and Rat Kwesh will pick one of the these twelve options:

- 1. $a_1 = x^{y^z}$;
- 2. $a_2 = x^{z^y}$;
- 3. $a_3 = (x^y)^z$;
- 4. $a_4 = (x^z)^y$;
- 5. $a_5 = y^{x^z}$;
- 6. $a_6 = y^{z^x}$;
- 7. $a_7 = (y^x)^z$;
- 8. $a_8 = (y^z)^x$;
- 9. $a_9 = z^{x^y}$;
- 10. $a_{10} = z^{y^x}$;
- 11. $a_{11} = (z^x)^y$;
- 12. $a_{12} = (z^y)^x$.

Let m be the maximum of all the a_i , and c be the smallest index (from 1 to 12) such that $a_c = m$. Rat's goal is to find that c , and he asks you to help him. Rat Kwesh wants to see how much cheese he gets, so he you will have to print the expression corresponding to that a_c .

Input

The only line of the input contains three space-separated real numbers x, y and z ($0.1 \leq x, y, z \leq 200.0$). Each of x, y and z is given with exactly one digit after the decimal point.

Output

Find the maximum value of expression among $x^{y^z}, x^{z^y}, (x^y)^z, (x^z)^y, y^{x^z}, y^{z^x}, (y^x)^z, (y^z)^x, z^{x^y}, z^{y^x}, (z^x)^y, (z^y)^x$ and print the corresponding expression. If there are many maximums, print the one that comes first in the list.

x^{y^z} should be outputted as x^y^z (without brackets), and $(x^y)^z$ should be outputted as $(x^y)^z$ (quotes for clarity).

Examples

input
1.1 3.4 2.5
output
z^y^x

input
2.0 2.0 2.0
output
x^y^z

input

1.9 1.8 1.7

output

$(x^y)^z$