## Plotting functions (variation)

Given a function $\mathrm{y}=\mathrm{f}(\mathrm{x})$ in RPN-notation plot it with stars (*) and then (!) its derivation with crosses
$(+)$ for $0<=x<=20$ with $\Delta x=1$ in a diagram with $21^{*} 21$ points ( $0<=x, y<=20$ ). Empty fields are marked with dots (.). For plotting the real number y should be rounded to integer ( $-0.5->-1,-0.4->0,0.4-$ $>0,0.5->1$ ). The function and its derivation are continuous between 0 and 20.
The function definition uses only the following characters: 0123456789x.+-*/^
' ${ }^{\prime}$ ' means 'power of'. Items are separated by space.

## Input

In the first line the number N of functions, then N lines with one function.

## Output

The plot of each function and its derivation in 21 lines.

## Example

Input:
1
x 1 -
Output:

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