

NORTHEAST REGIONAL CHAMPIONSHIP ROUND
OF THE
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Problem #6: Let's compute

You are to write a program that evaluates assignment statements. Assume that there is one (and only one) statement on each line of the input, and each assignment statement is terminated by a semicolon. The following are some of possible assignment statements:

```
length = 4 +6;
width=3+12*10;
area =length *width - b;
total =100 - y- (width+111*222) /area + x;
area= area +5 - 3 *4^ ( width - 3*(length+30 ))+100;
x = area +(total-area/ width ) ;
```

Here are some assumptions and rules:

- (1) All variables are 1-10 characters long, and only lowercase letters are used.
- (2) All values are integers, and all numbers are in the range of -32768 to 32767. (Such numbers are stored in 16 bits of memory.)
- (3) / is the integer division operator. So $7/2 = 3$ (truncated to integer), and $100/7 = 14$.
- (4) ^ is the exponential operator. For example, $2^5 = 2*2*2*2*2 = 32$.
- (5) An expression may contain both integer literals and variables.
- (6) Any number of spaces may be used to separate different items in a statement.
- (7) All statements are 1 - 80 characters long.
- (8) All variables have a default value of 0.
- (9) All statements are valid.
- (10) First line of the input contains a positive integer indicating the number of statements to be evaluated.

Your program should read and evaluate all statements and print a table that shows all variables, in alphabetical order and aligned to the left, that appear in the input data along with their corresponding final values aligned to right.

Sample Input

```
6
length = 4 +6;
width=3+12*10;
area =length *width - b;
total =100 - y- (width+111*222) /area + x;
area= area +5 - 3 *4^ ( width - 3*(length+30 ))+100;
x = area +(total-area/ width ) ;
```

Sample Output

Variable	Value
area	1143
b	0
length	10
total	80
width	123
x	1214
y	0