SAMPLE RUN - 1:
Input:
$B + A * a$
2 2
5 6 7 8
2 2
9 1 0 5
3256545654654654654654984654651894584
Output:
16282728273273273273274923273259472929 19539273927927927927929907927911367505
22795819582582582582584892582563262088 26052365237237237237239877237215156677

Explanation:
First line $B + A * a$ is an expression.
Second line is size of matrix A, rows then columns.
Third line is elements of matrix A row wise.
Fourth line is size of matrix B, rows then columns.
Fifth line is elements of matrix B row wise.
Sixth line is number a.

SAMPLE RUN - 2:
Input:
$(B - b) * (A - b) + a - b * c * a$
3 3
-915698346577989523555644 789 -100002 500 2559 23123 67846 -54984 65132165496846514465461398798416516323213218
3 3
-46580235 646984 146514 654 98465 132 -16510000 321312 31641
5465000000000000000000987256014500235362165005145216084560654089790
-9810056065651300158909898706549801064098740984765949804654989840908
-1002353621650051450165005145216500235362165409874098476594476594980
Output:
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576298370563014783576991184282028562565419720866656969846722430836181253995991639374482726177014
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576289387510895629304392658030311095439935488568773461032131316474247592325986157346305121592237
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417809640198625805
6098945135726076367126969931523877646503218138221172716057071097362738614935939708492153002518248
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576298370563014783576541040167120759794143583161527010153692808819193218479879498006421243960098
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576289387510895629303942513915403292668659350863643501339101694414605513770441156138281697865945
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417809640198625805
6098945135726076367126519787408969843731942000525576933013800861783579706859304513781268438865035
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576298370563014783576700515361920694893614269830050498271631515038947608651435742269407679984392
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417873535218145939
9576289387510895629304101989110203227768130037532166989457040400649478682510718669440336660035918
-5373813866006614860493173059080918707003830920605756959347801040218664744384762439252417809640198625805
6098945135726076367126679262603769778831412687192048171729099431194160652384842721068824835305168

Explanation:
First line $(B - b) * (A - b) + a - b * c * a$ is an expression.
Second line is size of matrix A, rows then columns.
Third line is elements of matrix A row wise.
Fourth line is size of matrix B, rows then columns.

Fifth line is elements of matrix B row wise.
Sixth line is number a.
Seventh line is number b.
Eight line is number c.
Note: Due to less space here to print matrix form, we listed output as row wise.

SAMPLE RUN - 3:
Input:
$B * A - a * A * B - b + c$
3 3
9156983465779895235556447 89 100002 500 2559 23123 67846 54984 651321654968465144654613987984165163232132183 2
46580235 646984 146514 654 98465 132
5465000000000000000000098725601450023536216500514521608456065408979098100560656513001589098987065498010640987409847659498046549898409081002353621650051450165005145216500235362165409874098476594476594980
Output:
Invalid

Explanation:
First line $B * A - a * A * B - b + c$ is an expression.
Second line is size of matrix A, rows then columns.
Third line is elements of matrix A row wise.
Fourth line is size of matrix B, rows then columns.
Fifth line is elements of matrix B row wise.
Sixth line is number a.
Seventh line is number b.
Eight line is number c.

Note: Invalid because of matrix dimensions doesn't match in between calculations.