

Reverse Polish notation (RPN)

Please implement a reverse Polish notation (RPN) calculator using the TDD approach.

The calculator should receive an RPN string and return an integer result.

The implementation should support integer add, subtract, multiply and divide operations.

The input string can contain integer operands, +, -, *, and / operators and spaces between them.

It is assumed that the input is always a correct RPN string. There is no need for any validity checks.

RPN description

In reverse Polish notation, the operators follow their operands. For instance, to add 3 and 4, one would write `3 4 +` rather than `3 + 4`. If there are multiple operations, operators are given immediately after their second operands.

So the expression written `"3 - 4 + 5"` in conventional notation would be written `"3 4 - 5 +"` in reverse Polish notation: 4 is first subtracted from 3, then 5 is added to it.

The expression written `"3 - (4 + 5)"` in conventional notation would be written `"3 4 5 + -"` in reverse Polish notation: 5 is first added to 4, which gives 9. Then 9 is subtracted from 3.

Examples:

Conventional	RPN	Result
2	2	2
3 + 4	3 4 +	7
12 / 4 - 1	12 4 / 1 -	2
12 / (4 - 1)	12 4 1 - /	4
((15 / (7 - (1 + 1))) * 3) - (2 + (1 + 1))	15 7 1 1 + - / 3 * 2 1 1 + + -	5

Feel free to refer to Wikipedia for additional information.