

Reverse Polish notation worksheet

1) What is the purpose of RPN?

no need for brackets, no need to backtrack when evaluating expression, no need for order of operations.

2) Explain how the stack is used for converting from RPN to infix

Go through each character in the postfix expression from left to right, If character is a number then push number onto the stack, Otherwise if the character is an operator (+, -, /, X) then pop the top 2 numbers from the stack. Evaluate the 2 numbers using the operator Push result back onto the stack

3) Convert the following expression to infix and evaluate

a) $5\ 3\ -$ $5-3 = 2$

b) $2\ 3\ 4\ +\ *$ $(3+4)*2 = 14$

c) $7\ 5\ +\ 2\ /\$ $(7+5)/2 = 6$

4) Convert the following infix expressions to RPN

a) $5 - (9 + 3) / 3$ $5\ 9\ 3\ +\ 3\ /\ -$

b) $5 \times 2 + 4 / 2$ $5\ 2\ \times\ 4\ 2\ /\ +$