

## Stack : infix to postfix with parenthesis

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- 1) start scanning from left to right
- 2) If(current element is an operand)  
Append it to the postfix expression
- 3) Else if (current element is opening bracket '(' )  
Push it onto the stack
- 4) Else if current element is closing bracket ')'
  - Pop elements from the stack and append them to postfix exp till its corresponding opening brackets does not occur
  - Pop opening brackets from the stack and discard both the brackets
- Else
  - // If(current element is an operator)
  - While(stack is not empty && priority of topmost element >= priority of current element)
  - {
  - Pop element from the stack and append it to postfix expression
  - }
  - Push current element onto the stack.
- 5) Repeat the above steps till end of infix expression
- 6) Pop all the remaining elements from the stack one by one and append them to postfix expression

Infix expression :  
5+9-4\*(8-6/2)+1\$(7-3)

Postfix Expression :  
59+4862/-\*-173-\$(+)

Current element : -

stack

5+9-4\*(8-6/2)+1\$(7-3)

$$\begin{aligned}
 & \textcircled{6} \textcircled{7} \textcircled{5} \textcircled{2} \textcircled{1} \textcircled{8} \textcircled{4} \textcircled{3} \\
 & \underline{5+9} \text{ } \underline{-4} \text{ } \underline{*} \text{ } \underline{(8-6/2)} \text{ } \underline{+1} \text{ } \underline{\$(7-3)} \\
 & 5+9-4*(8-\underline{62/})+1\$(7-3) \\
 & 5+9-4*(\underline{862/-})+1\$ \underline{73-} \\
 & 5+9-4*\underline{862/-}+\underline{173-}\$ \\
 & 5+9-\underline{4862/-}*+\underline{173-}\$ \\
 & \underline{59+}-\underline{4862/-}*+\underline{173-}\$ \\
 & \underline{59+4862/-}*+\underline{173-}\$ \\
 & 59+4862/-*-173-\$+
 \end{aligned}$$

( )  
 \$ \rightarrow \wedge y  
 \*, %  
 + -

59+4862/-\*-173-\$(+)