Prefix / Infix / Postfix Expressions

① Infix expression

<operand> <operator> <operand>

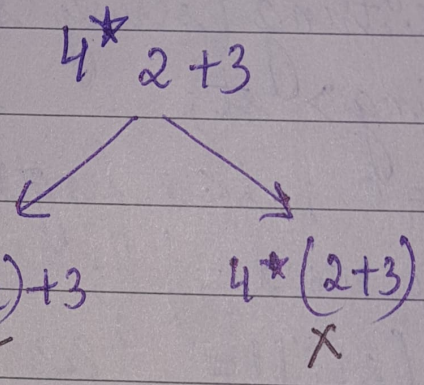
eg 2+3

a*c+b

(8/2)-5

Precedence order

1. () {} [] → L to R
2. ^ → R to L
3. *, / → L to R
4. +, - → L to R



② Prefix expression (Polish Notation)

<operator> <operand> <operand>

eg +AB

eg 4* 2 +3

(4 * 2) +3) = +*4 2 3

eg 5 - 6/3

(5 - (6/3)) = -5/6 3

③ Postfix expression (Reverse Polish Notation)
<operand> <operand> <operator>

eg A B +

eg ((4 * 2) + 3) = 4 2 * 3 +

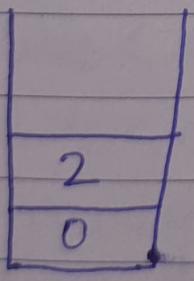
eg (5 - (6 / 3)) = 5 6 3 / -

Prefix Evaluation (Right to left) ← Polish Notation

- + 7 * 4 5 + 2 0

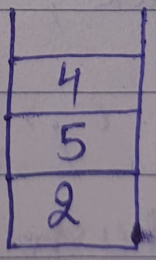
Last से start करेंगे operands read करना। जब operands मिलेंगे तब उनको stack में डालदो। फिर जैसे ही operator मिलेगा तब top 2 operands उठाओ stack में से और उन 2 operands पर operation लगादो। जो answer निकलेगा उसको फिरसे stack में Push करदो। Repeat this process till only one operand left in the stack.

20



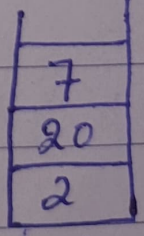
+ comes → top 2 elements

2 + 0 = 2



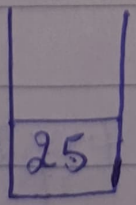
* comes → top 2 elements

4 * 5 = 20



20 + 7 = 27

+ comes → top 2 elements



27 - 2 = 25

- comes → top 2 elements