

BBM 201 Data Structures
QUIZ 5
26 November, 2019

Question: Consider the following extension to the prefix notation:

$(\text{expr})^k$ = expression repeated k times

For example:

$$(*a+b)^2a = *a+b*a+ba$$

Compute the value of $(+a-b)^{79}1$ for $a=1$ and $b=-1$.

Solution:

$$(+a-b)^21 = +a-b+a-b1 = a+(b-(a+(b-1))) = 1$$

Then

$$(+a-b)^41 = (+a-b)^2(+a-b)^21 = (+a-b)^21 = 1$$

Then

$$(+a-b)^{2k}1 = 1$$

Then

$$(+a-b)^{79}1 = +a-b1 = a + (b - 1)$$

For $a=1$ and $b=-1$

$$1 + (-1 - 1) = -1$$