

HONOR CODE STATEMENT (Please include this in your submitted file)

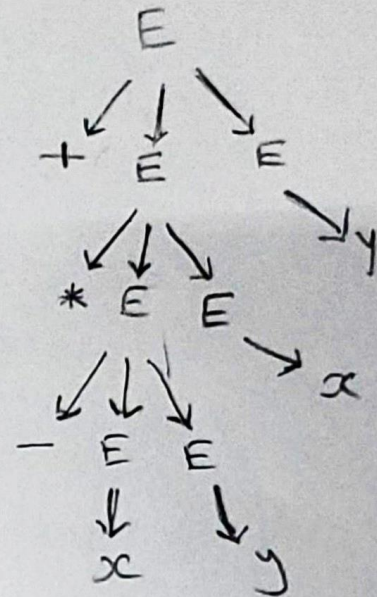
I truthfully declare that the work submitted for this midterm exam is solely my work and was not created in collaboration with anyone else in the class or elsewhere.

PUT YOUR NAME HERE : Shilp Patel

1. Right most derivation:

$E \rightarrow + EE$
 $\rightarrow + EY$
 $\rightarrow + * EEY$
 $\rightarrow + * EXY$
 $\rightarrow + * - EEXY$
 $\rightarrow + * - EYXY$
 $\rightarrow + * - XYXY$

Parse Tree:



2. $S : A$ Colon List

List : a List / A List / E

Term : Num

NonTerm : String

S = Start

a = terminals

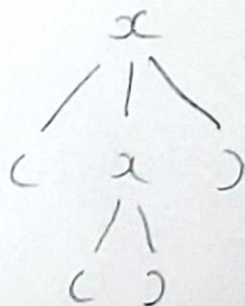
A = Nonterminals

3.

7)

| Stack | Input | Action |
|---------|-----------------|------------|
| 0 | <u>(</u>)) \$ | S2 |
| 0(2 | <u>(</u>)) \$ | S2 |
| 0(2(2 | <u>)</u>) \$ | S5 |
| 0(2(2)5 | <u>)</u> \$ | R2 |
| 0(2x3 | <u>)</u> \$ | pop & push |
| 0(2x3 | <u>)</u> \$ | S4 |
| 0(2x3)4 | \$ | R1 |
| 0x1 | \$ | pop & push |
| 0x1 | \$ | Accept |

Tree (reduction in reverse)

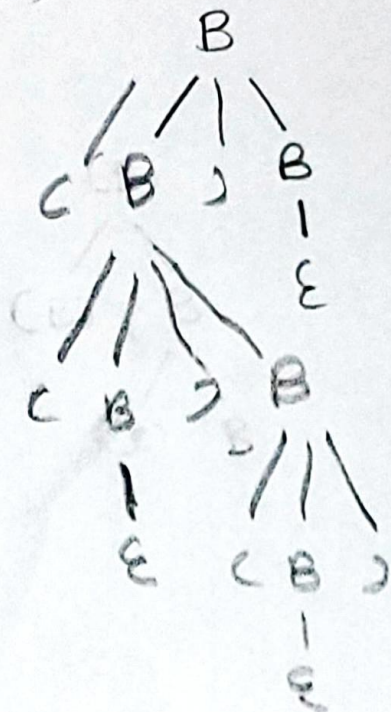


Right most

Derivation:

$$\begin{aligned}
 & x \\
 & = (x) \\
 & = (x)(x)
 \end{aligned}$$

8)



Sample

$B \rightarrow (B)B$

(B)

$((B)B)$

$((B)(B)B)$

$((B)(B))$

$((B)())$

$(()())$

Handle

$B \rightarrow (B)B$

$B \rightarrow \epsilon$

$B \rightarrow (B)B$

$B \rightarrow (B)B$

$B \rightarrow \epsilon$

$B \rightarrow \epsilon$

$B \rightarrow \epsilon$

Simple phrase: ϵ

handle: $(B)B$