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Questions

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Reading a Grammar 1

3/3 points (graded)

Consider this grammar:

```
S ::= ( B C ) * T
B ::= M + | P B P
C ::= B | E +
```

What are the nonterminals in this grammar? (Note that capitalization and quoting won't give you a clue here, so go by the structure of the grammar alone.)

☒ B

☒ C

☐ E

☐ M

☐ P

☒ S

☐ T

☐ |

☐ *

☐ +

☐ (

☐)



What are the terminals in this grammar?

☐ B

☐ C

☒ E

☒ M

☒ P

☐ S

☒ T

☐ |

☐ +

☐ *

☐ (

☐)



Which productions are recursive?

☐ S

☒ B

☐ C



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Correct (3/3 points)

Reading a Grammar 2

1/1 point (graded)

Which strings match the root nonterminal of this grammar?

```
root ::= 'a' + 'b'* 'c'?
```

☐ aabcc

☐ bbbc

☒ aaaaaaa

☒ abc

☐ abab

☒ aac



Explanation

This grammar matches 1 or more a, followed by 0 or more b, followed by 0 or 1 c. Of the choices above, only the marked ones follow this pattern.

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Reading a Grammar 3

1/1 point (graded)

Which strings match the root nonterminal of this grammar?

```
root ::= (A B)+  
A    ::= [Aa]  
B    ::= [Bb]
```

☐ aaaBBB

☒ abababab

☒ aBAbabAB

☐ AbAbAbA



Explanation

aBAbabAB is a match, because (A B)+ does not mean that the same character sequence has to occur one or more times, only that the subpattern (A B) must match one or more times. Each occurrence of (A B) matches independently.
AbAbAbA is missing its final match to B..

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Reading a Grammar 4

1/1 point (graded)

Which strings match the root nonterminal of this grammar?

```
root ::= integer ('-' integer)+  
integer ::= [0-9]+
```

☐ 617

☒ 617-253

☒ 617-253-1000

☐ ---

☐ integer-integer-integer

☐ 5--5

☒ 3-6-293-1



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Correct (1/1 point)

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