

AQA Computer Science A Level

4.4.3 Context-free languages

Flashcards

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What name is given to the rules that define how symbols can be replaced by other symbols?



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Production rules



Which of the following is an example of a production rule?

A) $a \rightarrow ab$

B) $R \rightarrow (B \rightarrow 5)$

C) $x + y^2 \rightarrow 17$



Which is an example of a production rule?

A



What type of object is enclosed in angle brackets in Backus-Naur form?



What type of object is enclosed in angle brackets in Backus-Naur form?

Non-terminal

(Meta-components, syntactic variables)



What name is given to an object in Backus-Naur form that cannot be broken down further?



What name is given to an object in Backus-Naur form that cannot be broken down further?

Terminal



Which of the following examples is in valid Backus-Naur form?

- A) $\langle \text{Name} \rangle ::= \langle \text{Name} \rangle$
- B) $\langle \text{Name} \rangle =:: \langle \text{Forename} \rangle \mid \langle \text{Surname} \rangle$
- C) $\langle \text{Name} \rangle ::= \langle \text{Forename} \rangle \langle \text{Surname} \rangle$



Which of the examples is in valid Backus-Naur form?

C



Why is it that Backus-Naur form is capable of representing some languages that cannot be represented by regular expressions?



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Backus-Naur form supports recursion



What is represented by ellipses in syntax diagrams?



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Terminals



Which of the following examples uses recursion?

- A) `<Number> ::= <Digit> | <Digit><Number>`
- B) `<Name> ::= <Forename><Surname>`
- C) `<Age> ::= <Digit> | <Digit><Digit>`



Which of the examples uses recursion?

A



Which shape represents non-terminals in syntax diagrams?



Which shape represents non-terminals in syntax diagrams?

Rectangle

