

Tutorial 7

COMP 355: Introduction to Theoretical Computer Science

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Outline

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Question 1

Give context-free grammars for the following language:

$$L = \{0^n \# 1^n \mid n \geq 0\}$$

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Question 2

Give context-free grammars for the following language:

$$L = \{v11v^R \mid v \in \{a, b\}^+\}$$

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Question 3

Give context-free grammars for the following language:

$$L = \{a^n b^n \mid n \text{ is a multiple of } 5\}$$

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Question 4

Give context-free grammars for the following language:

$$L = \{a^n b^n \mid n \text{ is not a multiple of } 5\}$$

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Question 5

Give context-free grammars for the following language:

$$L = \{0^n 1^m \mid n = 3m + 1\}$$

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Question 6

Give context-free grammars for the following language:

$$L = \{0^n 1^m \mid n \neq 3m + 1\}$$