

[Dashboard](#) / [My courses](#) / [MA-224-G 24H](#) / [Tests](#) / [Test 1 \(topics 1-3: Introduction, Concepts, Induction, Recursion, Grammars\)](#)**Started on** Wednesday, 11 September 2024, 2:32 PM**State** Finished**Completed on** Wednesday, 11 September 2024, 3:01 PM**Time taken** 29 mins 38 secs**Marks** 1.32/3.00**Grade** 1.32 out of 3.00 (43.91%)

Information

Information

This page contains all the problems for this test. The very last problem asks you to contact the person in charge of the exam and tell him or her the 4-digit key given in the problem text. In return you will be given a 5-digit signing code which you must give as the answer to the problem.

This problem does not count towards the final score, but **tests missing this code will not count towards the final grade.**

The following rules apply:

- Total time allowed: 30 minutes. The test will automatically close if time runs out.
- UiA's usual rules in regards to cheating on exams apply.

Question 1

Partially correct

Mark 0.75 out of 1.00

We use the notation $\{x \cdot n | n \in \mathbb{N}\}$ for all natural multiples of x .

Compute the following sets.

$$\{4 \cdot n | n \in \mathbb{N}\} \cup \{12 \cdot n | n \in \mathbb{N}\} = \{ 4 \cdot n | n \in \mathbb{N}\}$$

Your last answer was interpreted as follows:

4

$$\{24 \cdot n | n \in \mathbb{N}\} \cup \{6 \cdot n | n \in \mathbb{N}\} = \{ 6 \cdot n | n \in \mathbb{N}\}$$

Your last answer was interpreted as follows:

6

$$\{3 \cdot n | n \in \mathbb{N}\} \cap \{9 \cdot n | n \in \mathbb{N}\} = \{ 9 \cdot n | n \in \mathbb{N}\}$$

Your last answer was interpreted as follows:

9

$$\{12 \cdot n | n \in \mathbb{N}\} \cap \{14 \cdot n | n \in \mathbb{N}\} = \{ 84 \cdot n | n \in \mathbb{N}\}$$

Your last answer was interpreted as follows:

84

Question 2

Partially correct

Mark 0.17 out of 1.00

Translate the following numbers into the other bases and provide the intermediate division results (in base 10).

$2582_{10} = 2120_5$ with [2582, 57, 11, 2, 0]

$2582_{10} = 27V_{34}$ with [2582, 75, 2, 0]

$637_{11} = 23_{18}$ with

Example:

$1234_{10} = 86A_{12}$ with [1234, 102, 8, 0]

Your last answer was interpreted as follows:

2120

Your last answer was interpreted as follows:

[2582, 57, 11, 2, 0]

Your last answer was interpreted as follows:

27V

Your last answer was interpreted as follows:

[2582, 75, 2, 0]

Your last answer was interpreted as follows:

23

Question 3

Partially correct

Mark 0.40 out of 1.00

Consider the following EBNF grammar.

Owl \rightarrow cup { Hen | bag }+ | bus Fox

Fox \rightarrow Owl fan Hen

Hen \rightarrow bar { Owl } [hat Hen]

Translate it into a grammar 4-tuple.

You must fill in something in each field to get a marking.

Terminals = { "cup", "bag", "bus", "fan", "bar", "hat" }

Nonterminals = { "Owl", "MoreOwl", "Fox", "Hen" }

Start symbol = "Owl"

Rules = { ["MoreOwl", ["Owl", "Owl"]], ["MoreOwl", []], ["Hen", ["bar"]], ["Hen", ["bar", "MoreOwl"]], ["Hen", ["

Your last answer was interpreted as follows:

{ cup, bag, bus, fan, bar, hat }

Your last answer was interpreted as follows:

{ Owl, MoreOwl, Fox, Hen }

Your last answer was interpreted as follows:

Owl

Your last answer was interpreted as follows:

{ [MoreOwl, [Owl, Owl]] , [MoreOwl, []] , [Hen, [bar]] , [Hen, [bar, MoreOwl]] , [Hen, [bar, hat, Hen]] ,

Question **4**

Correct

Mark 0.00 out
of 0.00

Signing code

Before closing the test you must answer this problem with a signing code given to you by the person in charge of the test.

Tests missing this signing code will be ignored and will not count towards the final score.

Key: 206

Signing code:

Your last answer was interpreted as follows:

38119

◀ [Technical test](#)