Status	Finished
Started	Thursday, 11 September 2025, 12:44 PM
Completed	Thursday, 11 September 2025, 1:10 PM
Duration	25 mins 36 secs
Marks	1.60/3.00
Grade	**1.60** out of 3.00 (**53.35**%)

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**

Incorrect

Mark 0.00 out of 1.00

Let x and y be natural numbers and p(x) be the predicate **"x is a power of 3, i.e., $x = 3^n$, for an integer $n \geq 0$"**.
Mark all true statements.

- [ ] $\forall x \exists y (p(x) \wedge x \geq 2) \Rightarrow (p(y) \wedge x < y)$
- [ ] $\exists y \forall x (p(x) \wedge x \geq 2) \Rightarrow (p(y) \wedge x > y)$
- [ ] $\forall x \exists y (p(x) \wedge x < 2) \Rightarrow (p(y) \wedge x * y = 0)$
- [ ] $\exists y \forall x (p(x) \wedge x < 2) \Rightarrow (p(y) \wedge x = y)$
- [ ] $\forall x \exists y (p(x) \wedge x = 2) \Rightarrow (p(y) \wedge x \geq y)$
- [ ] $\exists y \forall x (p(x) \wedge x = 2) \Rightarrow (p(y) \wedge x \leq y)$
- [x] None of the above

Question **2**

Correct

Mark 1.00 out of 1.00

Let f be defined as follows.

$$f(0) = 9$$

$$f(1) = 9$$

$$f(n+2) = 5 - f(n) + f(n+1)$$

Compute the following values of f.

$f(2)$: 5

Your last answer was interpreted as follows:

5

$f(3)$: 1

Your last answer was interpreted as follows:

1

$f(5)$: 5

Your last answer was interpreted as follows:

5

$f(10)$: 1

Your last answer was interpreted as follows:

1

Question **3**

Partially correct

Mark 0.60 out of 1.00

Consider the following EBNF grammar.
A → K | A = A
K → B | B * K | ε
B → d | z | k | y | p | c | ε

Find a derivation for the following string: "d * d * c = p".

The derivation is given as a sequence of strings separated by >>, e.g. E >> EOE >> 1OE >> 1+E >> 1+2

You can add spaces as needed for your better overview.

A >> A=A >> B*K=A >> d*K=A >> d*B*K=A >> d*d*K=A >> d*d*B=A >> d*d*c=A >> d*d*c=K >> d*d*c=B >> d*d*c=

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: 426

Signing code: 51667

Your last answer was interpreted as follows:

51667

◄ Technical test

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