

Status	Beendet
Begonnen	Samstag, 22. März 2025, 12:31
Abgeschlossen	Samstag, 22. März 2025, 12:53
Dauer	21 Minuten 53 Sekunden
Bewertung	4,75 von 10,00 (47,5%)

Frage 1

Richtig

Erreichte
Punkte 1,00 von
1,00

What is the result of the resolution rule applied on the clauses $a \vee d$ and $a \vee \neg b \vee \neg d$?

- ☐ a. a
- ☐ b. $\neg b$
- ☒ c. $a \vee \neg b$ ✓
- ☐ d. $a \vee \neg b \vee d$
- ☐ e. $a \vee \neg b \vee \neg d$

Your answer is correct.

Frage 2

Falsch

Erreichte
Punkte 0,00 von
1,00

Provide an interpretation that falsifies the following statement:

$$((\neg a \vee \neg b) \wedge c) \rightarrow (\neg b \rightarrow d) \models (\neg a \rightarrow (a \vee d)) \wedge b$$

(interpretations should be written as a sequence of $\{0,1\}$ separated by commas representing the assignment of variables a, b, c, d in alphabetical order. For examples, $I\{a : 0, b : 1, c : 0, d : 1\}$ would be written "0,1,0,1")

Antwort: 0,1,1,0,0



Frage 3

Richtig

Erreichte
Punkte 1,00 von
1,00

Let

 W : The weather is good. B : Anna goes to uni by bike. T : Anna arrives in uni on time.

Which is the formalization of the sentence

'If the weather is good, Anna goes to uni by bike but does not arrive on time?'

- ☐ a. $(\neg B \wedge \neg T) \rightarrow W$
- ☐ b. $T \rightarrow (B \wedge W)$
- ☐ c. $W \rightarrow B \rightarrow T$
- ☒ d. $W \rightarrow (B \wedge \neg T)$ ✓

The answer is correct.

Frage 4

Falsch

Erreichte
Punkte 0,00 von
1,00What is the minimum number of branches in the tableau derivation of $p \rightarrow (q \vee r), q \rightarrow s, r \rightarrow s, p \vee s \models s$ have?

(Your answer should be a single integer without padding)

Antwort:

1

**Frage 5**

Richtig

Erreichte
Punkte 1,00 von
1,00Let A and B be two propositional formulas. Which formula(s) is(are) a semantical consequence of $(\neg A \rightarrow A) \rightarrow \neg B$?

(There is at least one correct answer, but there could be several.)

- ☐ a. $(\neg B \wedge B) \vee A$
- ☒ b. $(B \rightarrow \neg A) \vee B$ ✓
- ☒ c. $(B \vee \neg A) \vee \neg B$ ✓
- ☐ d. $(A \vee \neg B) \wedge B$

The answer is correct.

Frage 6

Falsch

Erreichte
Punkte 0,00 von
1,00

Given the entailment $P \rightarrow \neg Q, R \vee (S \rightarrow Q), \neg(\neg R \vee P) \models Q \vee \neg S$, fill in the blanks to make the statements correct.

The tableau $t : P \rightarrow \neg Q, t : R \vee (S \rightarrow Q), t : \neg(\neg R \vee P), f : Q \vee \neg S$ , which means that the entailment is .

There is  interpretation that makes $P \rightarrow \neg Q, R \vee (S \rightarrow Q), \neg(\neg R \vee P)$ true and $Q \vee \neg S$ false, which means that the entailment is .

Your answer is incorrect.

Frage 7

Falsch

Erreichte
Punkte 0,00 von
1,00

How many interpretations of $\{a \leftarrow 0, a \leftarrow 1\} \times \{b \leftarrow 0, b \leftarrow 1\} \times \{c \leftarrow 0, c \leftarrow 1\}$ satisfy the formula $(a \wedge b) \vee \neg c$?

(Your answer should be a single integer without padding)

Antwort: 

Frage 8

Richtig

Erreichte
Punkte 1,00 von
1,00

Which of those sets of labeled formulas has a closed tableau derivation?

- ☐ a. $t: A, f: A \rightarrow B$
- ☐ b. $t: A, f: A \wedge B$
- ☐ c. $f: \neg B, t: A \wedge B$
- ☒ d. $f: \neg B, f: A \rightarrow B$ 

Your answer is correct.

Frage 9

Falsch

Erreichte
Punkte -0,25
von 1,00

Let F be a WFF such that $F = b \wedge c \wedge (b \vee c)$. What is the resulting formula after replacing b by $b \vee \neg b$ and applying the syntactic simplifying rules?

- ☐ a. c
- ☐ b. a
- ☐ c. $\neg c$
- ☐ d. $b \wedge c$
- ☒ e. $b \wedge (b \vee \neg b) \wedge (b \vee c \vee \neg b)$ 

Your answer is incorrect.

Frage 10

Richtig

Erreichte
Punkte 1,00 von
1,00

Let A and B be propositional formula. Which of the following statements hold?

- ☐ a. $A \models B$ iff $A \wedge B$ is valid
- ☐ b. $A \models B$ iff $A \rightarrow \neg B$ is valid
- ☒ c. $A \models B$ iff $A \wedge \neg B$ is unsatisfiable 
- ☐ d. $A \models B$ iff $A \wedge B$ is unsatisfiable

Your answer is correct.