

Status	Beendet
Begonnen	Sonntag, 23. März 2025, 11:23
Abgeschlossen	Sonntag, 23. März 2025, 11:37
Dauer	14 Minuten 3 Sekunden
Bewertung	8,00 von 10,00 (80%)

Frage 1

Richtig

Erreichte Punkte 1,00 von 1,00

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

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

Your answer is correct.

Frage 2

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 $A \vee B$ is valid
- ☒ b. $A \models B$ iff $\neg A \vee B$ is valid ✓
- ☐ c. $A \models B$ iff $\neg(A \rightarrow B)$ is valid
- ☐ d. $A \models B$ iff $A \rightarrow B$ is unsatisfiable

Your answer is correct.

Frage 3

Falsch

Erreichte Punkte 0,00 von 1,00

Let A and B be two propositional formulas. Which formula(s) is(are) a semantical consequence of $(\neg A \wedge B) \vee \neg A$?
(There is at least one correct answer, but there could be several.)

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

The answer is wrong.

Frage 4

Falsch

Erreichte Punkte 0,00 von 1,00

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

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

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

Your answer is incorrect.

Frage 5

Richtig

Erreichte Punkte 1,00 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 $(\neg a \rightarrow \neg b) \rightarrow \neg c$?
(Your answer should be a single integer without padding)

Antwort: ✓

Frage 6

Richtig

Erreichte Punkte 1,00 von 1,00

Provide an interpretation that falsifies the following statement:
 $((\neg a \vee b) \rightarrow b) \wedge (b \rightarrow d) \models ((\neg a \rightarrow (a \vee b)) \rightarrow b) \vee c$
(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: ✓

Frage 7

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

'Anna does not go to uni by bike if the weather is bad?

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

The answer is correct.

Frage 8

Richtig

Erreichte Punkte 1,00 von 1,00

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

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

Your answer is correct.

Frage 9

Richtig

Erreichte Punkte 1,00 von 1,00

What is the minimum number of branches in the tableau derivation of $\neg p \rightarrow (q \vee r), q \rightarrow r, r \rightarrow s \models \neg s \rightarrow p$ have?

(Your answer should be a single integer without padding)

Antwort: ✓

Frage 10

Richtig

Erreichte Punkte 1,00 von 1,00

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

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

Your answer is correct.