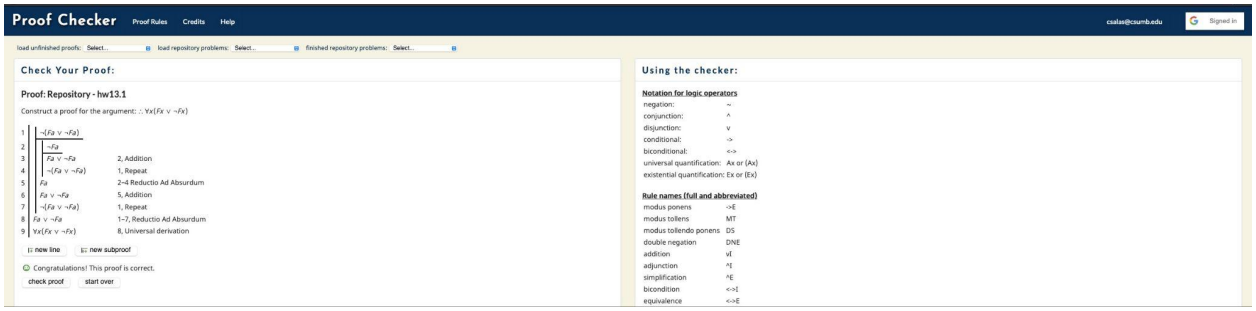
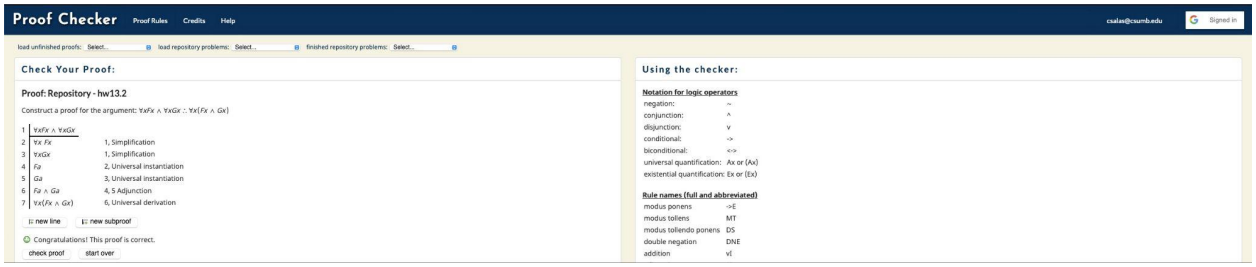
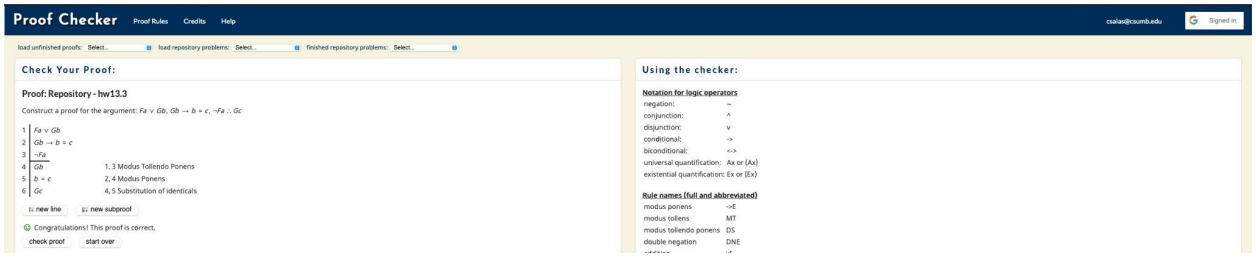
HW13-1



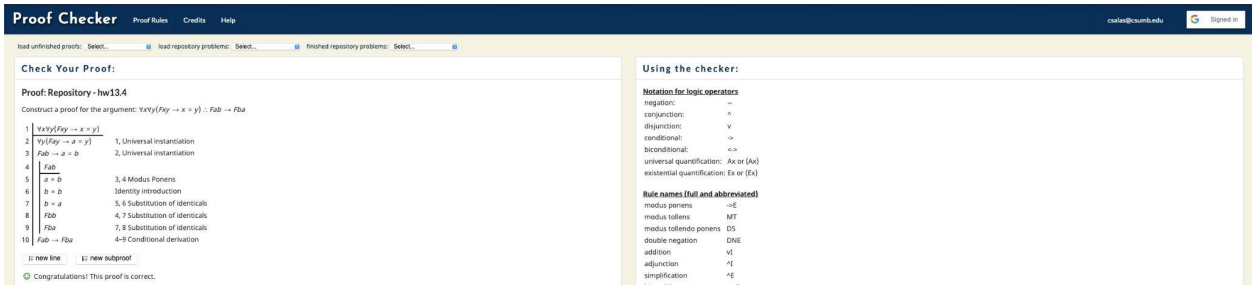
HW13-2



HW13-3

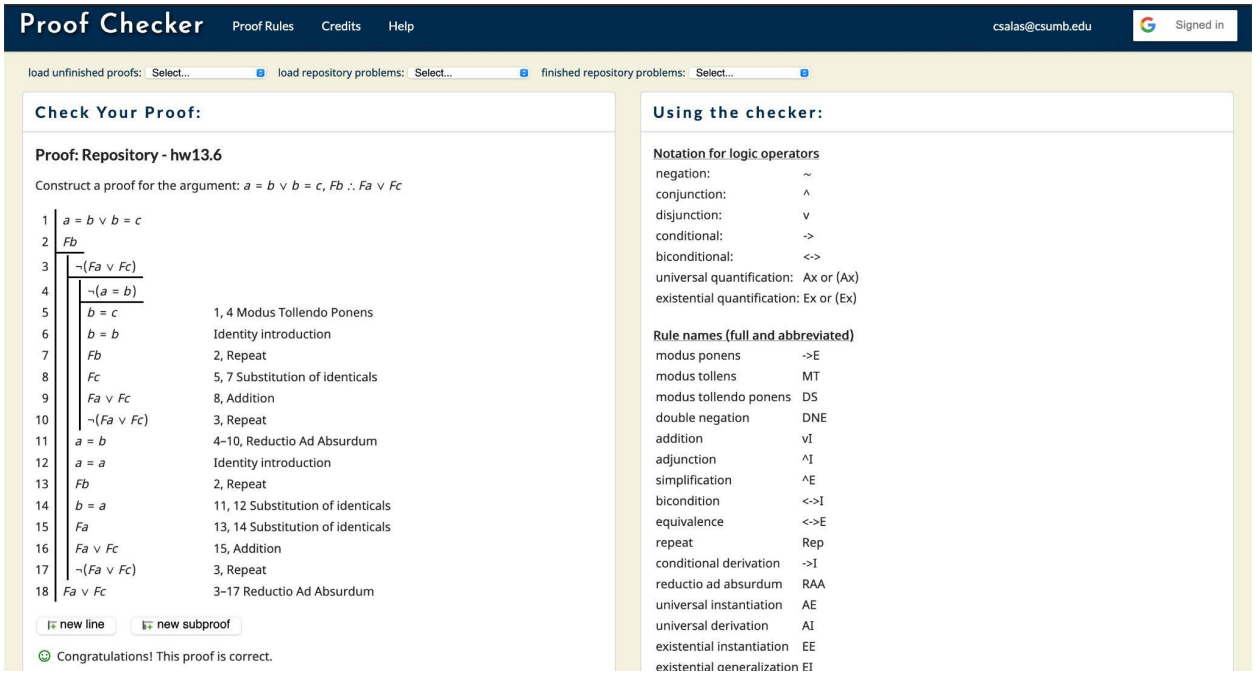


HW13-4



HW13-5

HW13-6


Proof Checker
Proof Rules
Credits
Help
csalas@csumb.edu
Signed in
load unfinished proofs: Select...
load repository problems: Select...
finished repository problems: Select...
Check Your Proof:
Proof: Repository - hw13.6
Construct a proof for the argument: a = b ∨ b = c, Fb ∴ Fa ∨ Fc
1 a = b ∨ b = c
2 Fb
3 ¬(Fa ∨ Fc)
4 ¬(a = b)
5 b = c 1, 4 Modus Tollendo Ponens
6 b = b Identity introduction
7 Fb 2, Repeat
8 Fc 5, 7 Substitution of identicals
9 Fa ∨ Fc 8, Addition
10 ¬(Fa ∨ Fc) 3, Repeat
11 a = b 4–10, Reductio Ad Absurdum
12 a = a Identity introduction
13 Fb 2, Repeat
14 b = a 11, 12 Substitution of identicals
15 Fa 13, 14 Substitution of identicals
16 Fa ∨ Fc 15, Addition
17 ¬(Fa ∨ Fc) 3, Repeat
18 Fa ∨ Fc 3–17 Reductio Ad Absurdum
new line
new subproof
Congratulations! This proof is correct.
Using the checker:
Notation for logic operators
negation: ~
conjunction: ^
disjunction: v
conditional: ->
biconditional: <->
universal quantification: Ax or (Ax)
existential quantification: Ex or (Ex)
Rule names (full and abbreviated)
modus ponens ->E
modus tollens MT
modus tollendo ponens DS
double negation DNE
addition vI
adjunction ^I
simplification ^E
bicondition <->I
equivalence <->E
repeat Rep
conditional derivation ->I
reductio ad absurdum RAA
universal instantiation AE
universal derivation AI
existential instantiation EE
existential generalization EI

HW13-7