Proofs

Pv~R, ~R->S, ~P ⊢ S&~R

1	(1)	P v ~R	A	
2	(2)	~R->S		A
3	(3)	~P	A	

PvQ->R&~P,QvR,~R ⊢ C

1	(1)	PvQ->R&~P		A
2	(2)	QvR	A	
3	(3)	~R	A	

P<->~Q⊢~P<->Q

1 (1) P<->~Q A

∀x(Gx->~Fx),∀x(~Fx->~Hx) ⊢ ∀x(Gx->~Hx)

1 (1) ∀x(Gx->~Fx) A
2 (2) ∀x(~Fx->~Hx) A

$\forall x\sim(Gx\&Hx), \exists x(Fx\&Gx) \vdash \exists x(Fx\&\sim Hx)$

1	(1)	$\forall x\sim(Gx\&Hx)$	A
2	(2)	$\exists x(Fx\&Gx)$	A

$\exists xFx \vee \exists xGx, \ \forall x(Fx \rightarrow Gx) \ |- \exists xGx$

1	(1)	$\exists xFx \vee \exists xGx$	A
2	(2)	$\forall x(Fx \rightarrow Gx)$	A

Test the following sentences for validity using the ITT method

P&(Q->R),Qv~P,(RvS)->T|-TvU

Pv(QvR),S&~T,(R->W)&~W|-Q

P&Q->(R<->S),~P->~T,~(~RvS)|-Q->~T

3. **Determine whether each of the following sentences is *contingent*, *inconsistent*, or a *tautology*.**

a. $\sim(P \vee \sim P)$

b. $(((\sim P \rightarrow Q) \& (R \rightarrow Q)) \leftrightarrow ((P \rightarrow R) \rightarrow Q))$

TRUE OR FALSE?

1. Every invalid argument has at least one false premise.
2. If an argument has a false conclusion, then it is invalid.
3. If an argument has a true conclusion, then it is sound.

TRANSLATE!!!

Not all **p**redators are **c**arnivorous.

Something **a**te everything.

Nothing **a**te itself.

Jim **l**oves everything, but nothing **l**oves Jim. (**“Loves” is a two-place predicate)**