

**Logic I**  
**Fall 2009**  
**Quiz 3**  
**10/15/2009**

True or false:

1. SD+ is stronger than SD.
2. If  $\{P\} \vdash Q$  in SD, then  $\emptyset \vdash P \supset Q$  in SD.
3. If P is true and Q is true, then  $\{P\} \vdash Q$  in SD
4. If  $\{P\} \not\vdash Q$  in SD, then  $\{P\} \vdash \sim Q$  in SD.
5. If P is true and Q is true, then  $\{P \vDash Q\}$
6. If P is true and Q is false, then  $\{P \not\vdash Q\}$
7. If  $\Gamma \cup \{P\}$  is inconsistent, then for some  $Q \in \Gamma$ ,  $\{P, Q\}$  is inconsistent.
  
8. Use appropriate definitions in terms of TVAs to prove the following:  
If  $\Gamma_1 \vDash P$  and  $\Gamma_2 \vDash Q$ , then  $\Gamma_1 \cup \Gamma_2 \vDash P \& Q$ .

MIT OpenCourseWare  
<http://ocw.mit.edu>

24.241 Logic I  
Fall 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.