

LOGIC HOMEWORK #2 SOLUTIONS

- 1) T " \supset "
- 2) T " \equiv "
- 3) F " \supset "
- 4) T " \neg "
- 5) T " \equiv "
- 6) Yes
- 7) No ["because"]
- 8) Yes
- 9) No ["because"]
- 10) Yes
- 11) $(J \supset W)$ ← don't forget to parenthesize entire statement
- 12) $(L \supset M)$

13) $(J \supset H)$ or contrapositive $(\neg H \supset \neg J)$

14) $((L \cdot W) \supset \neg O)$

15) $(M \supset (L \cdot \neg O))$

don't need $(\neg O)$
if expression
unambiguous

16) I: interest rates rise E: economy improves
C: consumers borrow

$(I \supset (E \cdot C))$

17) $(\neg C \supset (E \supset \neg I))$

18) U: unemployment rises

$((I \vee U) \cdot \neg(I \cdot U))$ or $(\neg(I \equiv U))$

19) S: stock prices fall D: deficit reduced
I: more jobs H: housing boom

$(\neg(J \vee H) \supset ((I \cdot D) \supset (S \cdot \neg E)))$

20) T: taxes raised G: gov't spending up

$((I \cdot E) \supset (G \cdot \neg T)) \vee (D \supset (T \cdot \neg G) \cdot (E \equiv D))$