

Review of Pairs of Statements/First Rules of Inference Examples with fill-in-the-blanks

The pair of statements below is best described as:

- a. consistent
- b. inconsistent
- c. logically contradictory
- d. logically equivalent

1. _____

$K \supset L$		$\sim L \supset \sim K$
T T T		F T T F T
T F F		T F F F T
F T T		F T T T F
F T F		T F T T F

2. _____

$K \supset L$		$K \cdot \sim L$
T T T		T F F T
T F F		T T T F
F T T		F F F T
F T F		F F T F

3. _____

$K \vee L$		$K \cdot L$
T T T		T T T
T T F		T F F
F T T		F F T
F F F		F F F

4. _____

$K \equiv L$		$K \cdot \sim L$
T T T		T F F T
T F F		T T T F
F F T		F F F T
F T F		F F T F

- (1) 1. $G \supset F$
 2. $\sim F$
 3. _____
- (2) 1. S
 2. $S \supset M$
 3. _____
- (3) 1. $R \supset D$
 2. $E \supset R$
 3. _____
- (4) 1. $B \vee C$
 2. $\sim B$
 3. _____
- (5) 1. N
 2. $N \vee F$
 3. $N \supset K$
 4. _____

- (6) 1. $\sim J \vee P$
 2. $\sim J$
 3. $S \supset J$
 4. _____
- *(7) 1. $H \supset D$
 2. $F \supset T$
 3. $F \supset H$
 4. _____
- (8) 1. $S \supset W$
 2. $\sim S$
 3. $S \vee N$
 4. _____
- (9) 1. $F \supset \sim A$
 2. $N \supset A$
 3. $\sim F$
 4. $\sim A$
 5. _____

In these problems, fill in the blanks with one of the four Rules of Inference we discussed in class:

MP Modus

Ponens

MT Modus

Tollens

HS Hypothetical
Syllogism

DS Disjunctive
Syllogism

- (10) 1. $H \supset A$
 2. A
 3. $A \vee M$
 4. $G \supset H$
 5. _____
- (11) 1. $W \vee B$
 2. W
 3. $B \supset T$
 4. $W \supset A$
 5. _____
- (12) 1. $K \supset \sim R$
 2. $\sim R$
 3. $R \vee S$
 4. $R \supset T$
 5. _____
- (13) 1. $\sim C \supset \sim F$
 2. $L \supset F$
 3. $\sim \sim F$
 4. $F \vee \sim L$
 5. _____
- (14) 1. $N \supset \sim E$
 2. $\sim \sim S$
 3. $\sim E \vee \sim S$
 4. $\sim S \vee N$
 5. _____
- (15) 1. $\sim R \supset \sim T$
 2. $\sim T \vee B$
 3. $C \supset \sim R$
 4. $\sim C$
 5. _____

- (16) 1. $\sim K$
 2. $\sim K \supset \sim P$
 3. $\sim K \vee G$
 4. $G \supset Q$
 5. _____
- (17) 1. $F \vee (A \supset C)$
 2. $A \vee (C \supset F)$
 3. A
 4. $\sim F$
 5. _____
- (18) 1. $(R \supset M) \supset D$
 2. $M \supset C$
 3. $D \supset (M \vee E)$
 4. $\sim M$
 5. _____
- (19) 1. $(S \vee C) \supset L$
 2. $\sim S$
 3. $\sim L$
 4. $S \supset (K \supset L)$
 5. _____
- (20) 1. $(A \vee W) \supset (N \supset Q)$
 2. $Q \supset G$
 3. $\sim A$
 4. $(Q \supset G) \supset (A \vee N)$
 5. _____