

Worksheet 2.9.

Practice the Twenty Sample Deductions

Practice these problems, and compare your answers to the solutions given above.

- | | | | | | |
|-----|--|--|-----|--|---|
| 1. | 1. $D \supset E$
2. $E \supset F$
3. $F \supset G$
<hr/> 4. _____
5. _____ | prem
prem
prem $\therefore D \supset G$ | 2. | 1. $E \vee F$
2. $E \supset G$
3. $\sim F$
<hr/> 4. _____
5. _____ | prem
prem
prem $\therefore G$ |
| 3. | 1. $G \vee \sim F$
2. $H \supset F$
3. $\sim G$
<hr/> 4. _____
5. _____
6. _____
7. _____
8. _____ | prem
prem
prem $\therefore \sim H$ | 4. | 1. $(\sim E \vee P) \vee U$
2. $(\sim E \vee P) \supset A$
3. $U \supset B$
4. $\sim A$
<hr/> 5. _____
6. _____
7. _____
8. _____ | prem
prem
prem
prem $\therefore B$ |
| 5. | 1. $\sim R \supset (A \supset M)$
2. $\sim R$
3. $\sim M$
<hr/> 4. _____
5. _____
6. _____
7. _____ | prem
prem
prem $\therefore \sim A \& \sim M$ | 6. | 1. $\sim M \vee \sim O$
2. $O \vee N$
3. M
<hr/> 4. _____
5. _____
6. _____
7. _____ | Prem
Prem
prem $\therefore N$ |
| 7. | 1. $A \supset (B \& C)$
2. $\sim B \& E$
<hr/> 3. _____
4. _____
5. _____
6. _____ | Prem
Prem $\therefore \sim A$ | 8. | 1. $A \supset (B \& C)$
2. $\sim B$
<hr/> 3. _____
4. _____
5. _____
6. _____ | Prem
Prem $\therefore \sim A$ |
| 9. | 1. $(A \& B) \supset C$
2. $A \& D$
3. B
<hr/> 4. _____
5. _____
6. _____
7. _____
8. _____ | Prem
Prem
Prem $\therefore B \& C$ | 10. | 1. $B \supset [C \vee (D \& E)]$
2. $B \& \sim C$
<hr/> 3. _____
4. _____
5. _____
6. _____
7. _____
8. _____ | Prem
Prem $\therefore E$ |
| 11. | 1. $\sim M \supset O$
2. $U \supset \sim M$
3. $S \& \sim O$
<hr/> 4. _____
5. _____
6. _____
7. _____
8. _____ | Prem
Prem
prem $\therefore \sim U \& \sim O$ | 12. | 1. $(A \vee B) \supset K$
2. $C \supset (A \vee B)$
3. $D \equiv C$
<hr/> 4. _____
5. _____
6. _____
7. _____
8. _____ | Prem
Prem
prem $\therefore \sim K \supset \sim D$ |

13. 1. $\sim(A \& \sim H)$ Prem
 2. $\sim H \vee \sim E$ Prem
 3. $N \& A$ Prem $\therefore S \vee \sim E$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____

14. 1. $U \supset C$ Prem
 2. $L \vee U$ Prem
 3. $(M \& H) \supset \sim L$ Prem $\therefore (M \& H) \supset C$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____

15. 1. $\sim B \& \sim U$ Prem
 2. $\sim U \supset (W \vee S)$ Prem
 3. $(W \supset Q) \& (S \supset A)$ Prem $\therefore Q \vee A$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____

16. 1. $(A \vee B) \supset K$ Prem
 2. $C \supset (A \vee B)$ Prem
 3. $\sim C \supset \sim D$ Prem $\therefore D \supset K$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____

17. 1. $A \equiv (B \& C)$ Prem
 2. $\sim(A \vee \sim C)$ Prem $\therefore \sim B$
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

18. 1. $(M \vee S) \supset (N \& O)$ Prem
 2. $\sim S$ Prem
 3. $O \supset S$ Prem $\therefore \sim M$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

19. 1. $(\sim A \supset D) \& (A \supset I)$ Prem
 2. $(D \supset S) \& (I \supset Q)$ Prem $\therefore Q \vee S$
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

20. 1. $E \supset (U \supset D)$ Prem
 2. $E \supset U$ Prem
 3. $\sim D$ Prem $\therefore \sim(E \vee D)$
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____