

EXAMPLES

$$\begin{array}{l} 1. \quad w \vee p \\ \quad \quad \underline{\sim w} \end{array}$$

$\therefore p$

reason: L. of Disjunctive Inf.

$$\begin{array}{l} 2. \quad \sim p \rightarrow \sim q \\ \quad \quad \underline{q} \end{array}$$

$\therefore p$

L. of Contrapositive Inf.

$$\begin{array}{l} 3. \quad y \wedge q \\ \quad \quad \underline{\sim y \wedge q} \end{array}$$

$\therefore y$

L. of Simplification
DeMorgan

$$\begin{array}{l} 4. \quad p \rightarrow s \\ \quad \quad \underline{s \rightarrow \sim t} \end{array}$$

$\therefore p \rightarrow \sim t$

reason: Law of Syllogism

$$\begin{array}{l} 5. \quad \sim t \vee p \\ \quad \quad \underline{\sim p} \end{array}$$

$\therefore \sim t$

L. of Disjunctive Inf.

$$6. \quad \underline{\sim(c \wedge d)}$$

$\therefore \sim c \vee \sim d$

DeMorgan's Law

$$\begin{array}{l} 7. \quad \sim b \rightarrow c \\ \quad \quad \underline{\sim b} \end{array}$$

$\therefore c$

Reason: L. of Detachment

$$\begin{array}{l} 8. \quad \sim a \rightarrow b \\ \quad \quad \underline{b \rightarrow \sim d} \end{array}$$

$\therefore \sim a \rightarrow \sim d$

L. of Syllogism

$$\begin{array}{l} 9. \quad \sim q \vee \sim pp \\ \quad \quad \underline{q} \end{array}$$

$\therefore \sim pp$

OR L. of Disjunctive Inf.
 $\therefore \sim(q \vee pp)$
DeMorgan's Law

$$\begin{array}{l} 10. \quad \sim t \rightarrow r \\ \quad \quad \underline{\quad \quad \quad \sim r} \end{array}$$

$\therefore t$

Reason: L. of Contrapositive Inf.

$$\begin{array}{l} 11. \quad f \rightarrow \sim e \\ \quad \quad \underline{f} \end{array}$$

$\therefore \sim e$

L. of Detachment

$$12. \quad \underline{f \wedge \sim g}$$

$\therefore \sim g$ Law of Simplification

OR

$\underline{f \wedge \sim g}$
 $\sim(\sim f \vee g)$
DeMorgan's Law