

1.6 Tautology Cont.

Oct. 11, 2006

$$\underline{p \Rightarrow T} ; \underline{q \Rightarrow T} ; \underline{r \Rightarrow F}$$

$$\textcircled{1} p \wedge q =$$

$$T \wedge T = \underline{\underline{T}}$$

$$\textcircled{2} r \rightarrow (p \vee q) =$$

$$\begin{aligned} \textcircled{1pt} \rightarrow F &\rightarrow (T \vee T) \\ F &\rightarrow (\underline{\underline{T}}) = \underline{\underline{T}} \end{aligned}$$

$$\underline{P \Rightarrow T} ; \underline{q \Rightarrow T} ; \underline{r \Rightarrow F}$$

$$\textcircled{3} \quad (r \vee \sim r) \rightarrow (p \wedge \sim q)$$

$$\textcircled{1st} \quad (F \vee \underline{\sim F}) \rightarrow (T \wedge \underline{\sim T})$$

$$(\underline{F \vee T}) \rightarrow (\underline{T \wedge F})$$

$$(T) \rightarrow (F) = \underline{\underline{F}}$$

$$\textcircled{4} \quad [\bar{r} \wedge (p \rightarrow \sim r)] \rightarrow p$$

$$[F \wedge (T \rightarrow \underline{\sim F})] \rightarrow T$$

$$[F \wedge (T \rightarrow \underline{T})] \rightarrow T$$

$$[\underline{F \wedge (T)}] \rightarrow T$$

$$[F] \rightarrow T = \underline{\underline{T}}$$

① Sub. Correctly

② Negation if inside () or []

③ [] or ()

④ Show each Step!

O.T.L.

Exp:

① pg 22: 11-16