

TU 152

Example 1: Prove that if $u \vee (r \rightarrow t)$ and $\sim u \wedge \sim t$, then $\sim r$

Example 2: Prove that if $x \rightarrow (y \rightarrow z)$, $\sim y \rightarrow \sim x$, and x , then z

Example 3: Prove that if $\sim p \rightarrow \sim q$, $\sim u$, $p \rightarrow t$, and $q \vee u$, then t

Example 4: Show $\sim t$ if $[r \rightarrow (s \rightarrow \sim t)] \wedge [(\sim s \rightarrow \sim r) \wedge r]$

Example 5: Prove that if $(\sim x \vee \sim y) \rightarrow (z \wedge w)$, $z \rightarrow t$, and $\sim t$, then x

Example 6: Prove that if $(\sim a \vee b) \rightarrow c$, $\sim c \vee d$, and $d \rightarrow \sim (e \vee \sim e)$, then a

Example 7: Prove that if $x \vee \sim y$, and $z \rightarrow \sim (x \vee t)$, then $\sim a \rightarrow (\sim c \rightarrow e)$

Example 8: Prove that if $(\sim x \wedge y) \rightarrow \sim z$, $\sim (x \vee y) \rightarrow w$, and $\sim x$, then $\sim z \vee w$

Example 9: Prove that if

$a \vee (b \wedge \sim c)$, $\sim a$, $b \rightarrow (d \rightarrow e)$, and $\sim c \rightarrow (x \rightarrow y)$, then $[a \vee x \vee d] \rightarrow (y \vee e)$

Example 10: Prove that if

$a \rightarrow (b \wedge c)$, $(d \wedge c) \rightarrow (e \wedge \sim a)$, $a \vee (d \rightarrow \sim e)$, and $d \wedge (b \rightarrow e)$, then $\sim e \leftrightarrow \sim a$

Example 11: Prove that if $[\sim (s \wedge r) \vee s \vee p] \rightarrow (s \wedge t)$, then t

Example 12: Prove that if $a \vee b \vee c$, $\sim (d \wedge e) \rightarrow \sim (f \vee a)$, and $(c \rightarrow a) \wedge (\sim b \vee f)$, then d

Example 13: Prove that if $\sim (p \rightarrow q)$, $(p \wedge r) \rightarrow (s \rightarrow q)$, and $(\sim r \rightarrow q) \vee (p \rightarrow s)$, then $r \leftrightarrow \sim s$

Example 14: Show that for every natural number n , $n < 2^n$