

## Two Interesting Proofs Keith Burgess-Jackson

Anything (in this case,  $q$ ) follows from a self-contradiction ( $p \cdot \sim p$ ):

1. $p \cdot \sim p$	assumption
2. $p$	1, Simp.
3. $\sim p \cdot p$	1, Com.
4. $\sim p$	3, Simp.
5. $p \vee q$	2, Add.
6. $q$	5, 4, D.S.

A tautology ( $p \vee \sim p$ ) follows from anything (in this case,  $q$ ):

1. $q$	assumption
2. $q \vee \sim p$	1, Add.
3. $\sim p \vee q$	2, Com.
4. $p \supset q$	3, Impl.
5. $p \supset (p \cdot q)$	4, Abs.
6. $\sim p \vee (p \cdot q)$	5, Impl.
7. $(\sim p \vee p) \cdot (\sim p \vee q)$	6, Dist.
8. $\sim p \vee p$	7, Simp.
9. $p \vee \sim p$	8, Com.