

$$3) F = (p \wedge q) \vee (\neg r \wedge s \wedge \neg t)$$

$$\neg F = ?$$

$$F = A \vee B$$

$$\neg F = \neg A \wedge \neg B = (\neg p \vee \neg q) \wedge (\neg r \vee \neg s \vee \neg t)$$

$$\neg A = \neg(\neg p \wedge \neg q) = \neg \neg p \vee \neg \neg q = p \vee q$$

$q \wedge b$

Ex 4 Thu 4 Oct 2018

$$f(p, q, r, s) = \underbrace{(q \vee r \vee s) \wedge (p \vee r \vee s) \wedge (p \vee q \vee s)}_{\text{Conjunctions of disjunctions}}$$

Disjunction of conjunctions

$$(p \wedge q) \vee (p \wedge r) \vee (p \wedge s) \vee (q \wedge r) \vee (q \wedge s) \vee (r \wedge s)$$

$$(q \vee r) \wedge p = (p \wedge q) \vee (p \wedge r)$$

$$(x \neq 0) \wedge \wedge (y > 0 \quad \text{OR} \quad y/x \% 2 == 0)$$

$$(x \neq 0 \wedge \wedge y > 0) \vee (x \neq 0 \wedge \wedge y/x \% 2 == 0)$$

P2

$$p \rightarrow q$$

$$p$$

$$p \rightarrow (p \wedge q)$$

$$\neg p \vee (p \wedge q)$$

$$(\neg p \vee p) \wedge (\neg p \vee q)$$

$$T \wedge (\neg p \vee q)$$

$$(1) p \rightarrow q$$

$$(2) p \quad |$$

$$(3) q$$

$$(4) p \wedge q$$

(Modus Ponens)

(2 & 3)