

Exercise 14

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Problem 1.

Solution. (a) $\text{UnitPro}(\mathcal{J}_1) = [p_1 \mapsto \mathbf{T}, p_2 \mapsto \mathbf{T}, p_3 \mapsto \mathbf{F}, p_4 \mapsto \mathbf{T}, p_5 \mapsto \mathbf{T}, p_6 \mapsto \mathbf{T}]$.

(b) $\text{UnitPro}(\mathcal{J}_2) = [p_2 \mapsto \mathbf{T}, p_3 \mapsto \mathbf{F}, p_4 \mapsto \mathbf{T}]$.

(c) $\text{UnitPro}(\mathcal{J}_3) = [p_2 \mapsto \mathbf{T}, p_3 \mapsto \mathbf{T}, p_4 \mapsto \mathbf{T}, p_4 \mapsto \mathbf{F}, p_5 \mapsto \mathbf{T}, p_6 \mapsto \mathbf{T}]$.

Remark. There are several possible results for $\text{UnitPro}(\mathcal{J}_3)$ because it causes a conflict and the sequence of propagations matter.

□

Problem 2.

Solution. (a) $p_3 \vee p_5$.

(b) Unpick p_5, p_1 .

(c) $\text{UnitPro } p_5 \mapsto \mathbf{T}; \text{UnitPro } p_6 \mapsto \mathbf{T}$.

□

Problem 3.

Solution. (a) $\text{UnitPro } p_9 \mapsto \mathbf{F}; \text{UnitPro } p_6 \mapsto \mathbf{F}; \text{UnitPro } p_{10} \mapsto \mathbf{T}$.

(b) $\text{UnitPro } p_5 \mapsto \mathbf{T}; \text{UnitPro } p_5 \mapsto \mathbf{F}$.

(c) $p_4 \vee \neg p_7 \vee p_1$.

(d) Unpick p_1, p_5 .

(e) $\text{UnitPro } p_1 \mapsto \mathbf{T}$.

□