

2.41.1. Proof Problems

Construct a **proof** for each of the following sentences.

T 2.1. $\sim(P \wedge \sim P)$

T 2.2. $(P \vee \sim P)$

T 2.3. $(P \vee \sim(P \vee P))$

T 2.4. $(P \vee (\sim P \vee \sim P))$

T 2.5. $(P \vee (\sim P \vee Q))$

T 2.6. $(\sim Q \vee (\sim P \vee Q))$

T 2.7. $((P \vee Q) \vee \sim(P \wedge Q))$

T 2.8. $((P \vee Q) \vee (\sim P \wedge \sim Q))$

T 2.9. $((\sim(P \vee Q) \vee \sim(\sim P \vee Q)) \vee Q)$

T 2.10. $(((P \wedge Q) \vee (\sim P \wedge Q)) \vee \sim Q)$

T 2.11. $(((P \vee Q) \wedge (\sim P \vee Q)) \vee \sim Q)$

T 2.12. $\sim((P \vee Q) \wedge (\sim P \vee Q)) \wedge \sim Q)$