

Exercise Set 9

Melvin Fitting

April 10, 2018

For each of the following formulas, determine its status in the system of first degree entailment. More specifically, for each either give a tableau proof or give an explicit counter-model.

1. $\{P \supset P\} \vdash_{FDE} P \vee \neg P$
2. $\{P \vee \neg P\} \vdash_{FDE} P \supset P$
3. $\{P \wedge \neg P\} \vdash_{FDE} Q \vee \neg Q$
4. $\{(P \wedge Q) \supset R\} \vdash_{FDE} (P \wedge \neg R) \supset \neg Q$
5. $\{P \supset Q\} \vdash_{FDE} Q \vee \neg Q$
6. $\{\neg(P \supset Q)\} \vdash_{FDE} Q \supset R$
7. $\{P \supset Q\} \vdash_{FDE} P \vee \neg P$