Proof by Contradiction

The most familiar form of proof by contradiction is to prove a formula F by assuming $\neg F$ and proving FALSE. This reasoning is based on the tautology $(\neg F \Rightarrow \text{FALSE}) \Rightarrow F$. Another form of proof by contradiction is to prove F by assuming $\neg F$ and proving F. The soundness of this rule is a simple corollary of the soundness of the familiar proof by contradiction, since F and the assumption $\neg F$ imply FALSE. This form of proof by contradiction also follows from the tautology $(\neg F \Rightarrow F) \Rightarrow F$.

Question Verify the two tautologies

$$(\neg F \Rightarrow \text{FALSE}) \Rightarrow F \qquad (\neg F \Rightarrow F) \Rightarrow F$$

by expressing $\Rightarrow$ in terms of other Boolean operators.

CLOSE