Problem 10.9

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$$(\neg A \land \neg B \Rightarrow \neg (A \lor B))^f$$

$$(\neg A \land B)^t$$

$$\neg A^t$$

$$\neg B^t$$

$$A^f$$

$$(A \land B)^t$$

$$A^t \mid B^t$$

$$\bot \quad \bot$$

Therefore the initial statement is not false (true) $\,$

$$(A \Rightarrow B) \wedge (B \Rightarrow A \wedge B)^{t}$$

$$A \Rightarrow B^{t}$$

$$B \Rightarrow A \wedge B^{t}$$

$$\begin{vmatrix}
B^f & A^f & B^t \\
A \wedge B^t & B^f \\
A^t & A^t \\
\bot & \bot
\end{vmatrix}$$

$$A \wedge B^t \\
A^t \\
B^t \\
B^t$$

Continue to the table

$$\therefore \{\{\mathbf{A}^f,\,\mathbf{B}^f\},\,\{\mathbf{A}^t,\,\mathbf{B}^t\}\}$$