

Logic questions

For each statement below, say if it is a tautology, satisfiable but not a tautology, or always false?

- ▶ $(P \rightarrow (\neg P \vee Q)) \wedge \neg Q$
- ▶ $(P \rightarrow \neg P) \wedge P$
- ▶ $P \rightarrow (P \vee \neg P)$