Problem 1: Construct a truth table to show that $P \Rightarrow Q$ is equivalent to $(\sim P) \lor Q$. Then write out “$P \Rightarrow Q$ is equivalent to $(\sim P) \lor Q$” in English.

Problem 2: Construct a truth table to show that $\sim (P \Rightarrow Q)$ is equivalent to $P \land \sim Q$. Then write out “$\sim (P \Rightarrow Q)$ is equivalent to $P \land \sim Q$” in English.

Problem 3: Construct a truth table to show that $P \Rightarrow (Q \land R)$ is equivalent to $(P \Rightarrow Q) \land (P \Rightarrow Q)$. Then write out “$P \Rightarrow (Q \land R)$ is equivalent to $(P \Rightarrow Q) \land (P \Rightarrow Q)$” in English.