TFL Natural Deduction Conjunction Exercise

PHI 154 (Eliot) 2021

For each argument, construct a proof using the natural deduction system described in Chapter 16. The inference rules we have learned at this point are just R, $\wedge$I, and $\wedge$E (introduced in chapters 16.2–16.3). The premises are separated by commas, and the conclusion comes after the "therefore" symbol, which is "$\therefore$" (as introduced on page 2).

1. $R \to S \therefore R \to S$
2. $A \wedge B \therefore B \wedge A$
3. $G \vee \neg H, J \wedge K \therefore J \wedge (G \vee \neg H)$
4. $(C \to D), (D \to E), (E \leftrightarrow G) \therefore [(C \to D) \wedge (D \to E)] \wedge (E \leftrightarrow G)$
5. $D \wedge (E \wedge F) \therefore (E \wedge D) \wedge F$