### Part A

Give pairs of deductions to show that the following listed pairs of sentences are equivalent. Use the space on these two pages efficiently. For each pair of deductions, write the one in the left column and the other one next to it in the right side column.

1. \( \sim(D \& H) \), \( D \supset \sim H \)
2. \( S \), \( (A \& \sim A) \supset S \)
3. \( M \), \( [(M \& \sim M) \& M] \lor M \)
4. \( \sim Q \& E \), \( \sim Q \& (Q \lor E) \)
5. \( A \lor (B \& C) \), \( (\sim B \supset A) \& (\sim C \supset A) \)
6. \( F \supset \sim (G \lor H) \), \( (F \supset \sim G) \& (F \supset \sim H) \)
7. \( (P \lor Q) \supset S \), \( (P \supset S) \& (Q \supset S) \)
8. \( \sim(W \lor K) \), \( \sim K \& [W \supset (H \& \sim H)] \)