Practice Proofs

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Prove the following.

$\boxed{1}$ $(A \to B') \wedge (C \to B) \wedge ((C' \vee D) \to E) \wedge (E \to G) \to (A \to G)$

$\boxed{2}$ $(A \to (B \wedge C)) \wedge ((B \vee D) \to E) \wedge (G' \vee (D \vee C')) \wedge (E \leftrightarrow G) \to (A \to D)$

$\boxed{3}$ $((P' \vee Q') \to (A \vee B)) \wedge (P \to C) \wedge (B \to C) \to (C' \to A)$

$\boxed{4}$ $((A \vee B) \to (C \vee D)) \wedge (C \to E) \wedge (A \wedge E') \to (D \vee W)$

$\boxed{5}$ $((A' \vee B') \to Q') \wedge (A' \to (P \to Q)) \wedge ((A \to D) \wedge D') \to P'$

$\boxed{6}$ $(A \to (B \to C)) \wedge (B' \to (Q \vee G)) \wedge ((G \wedge H') \to (D \to B)) \wedge ((A \wedge C') \vee H) \wedge (H' \wedge Q') \to D'$

$\boxed{7}$ $((A \vee B) \to (C \vee D)) \wedge (C \to E) \wedge (C \vee P') \wedge (A \wedge E') \wedge (P \vee (D \to Z)) \to Z$

$\boxed{8}$ $((X \vee Y) \to (Y \vee Z)) \wedge (X \wedge (Y \to Y')) \wedge (Z \to Z') \to (Y' \vee Z')$

$\boxed{9}$ $((B' \vee C') \to (A \to W)) \wedge (A' \to (U \to Z')) \wedge (U \wedge X') \wedge (X \vee (W' \wedge B')) \wedge (Z' \to (S' \vee X)) \to S'$

$\boxed{10}$ $((P' \vee Q') \to (R' \vee S')) \wedge (P \to U) \wedge (W' \to (U' \wedge Z')) \wedge ((S' \to Z) \wedge (X \wedge Y)') \wedge (W' \vee (X \wedge Y)) \to (R' \wedge W')$