Formal Logic - Präsenzaufgaben 2 - Resolution Calclulus Propositional Logic

Transform the following formulas into CNF and apply the resolution calculus:

$$F_1 = (A \Rightarrow B) \wedge \neg(C \wedge D) \wedge (A \vee C) \wedge \neg(A \wedge C) \wedge (B \vee D) \wedge \neg(B \wedge D) \wedge \neg B$$
$$F_2 = (C \Rightarrow A \vee B) \wedge \neg\big(B \wedge (C \Rightarrow A)\big) \wedge B \wedge (B \Rightarrow A)$$
$$F_3 = \big(A \vee \neg(B \wedge \neg C)\big) \wedge (B \vee C) \wedge (A \Rightarrow C) \wedge (C \Rightarrow B) \wedge \neg C$$
$$F_4 = \neg(\neg A \wedge \neg B \wedge C) \wedge \neg(B \wedge (C \Rightarrow A))$$

Use the resolution calculus to show that the following formula is a tautology:

$$F = (\neg A \wedge \neg B \wedge C) \vee (B \wedge C) \vee (\neg A \wedge \neg C) \vee A$$