Homework 3 – Part A.

Prove that the following arguments are valid. You may use any of the "Stage 1" rules of inference (MPP, MTT, DN, &I, &E, ∨I), plus the Rule of Assumptions (A) and Conditional Proof (CP). *You must list dependency numbers for each line of your proof.*

1. (1) $(D \,\&\, E) \rightarrow -F$
   (2) $D \rightarrow E$ / $D \rightarrow -F$

2. (1) $-(A \,\&\, B) \rightarrow -(C \vee D)$ / $C \rightarrow A$

3. (1) $-(P \vee Q)$ / $-P \,\&\, -Q$

4. (1) $E \rightarrow (F \rightarrow G)$
   (2) $H \rightarrow (G \rightarrow I)$
   (3) $(F \rightarrow I) \rightarrow (H \rightarrow J)$ / $(E \,\&\, H) \rightarrow J$

5. (1) $P \rightarrow -P$ / $-P$