1: $(E \wedge F) \vee (E \wedge G)$ premise

2: $E \wedge F$ assumption

3: E $\wedge$ elim 2

4: F $\wedge$ elim 2

5: $F \vee G$ $\vee$ intro 4

6: $E \wedge (F \vee G)$ $\wedge$ intro 3,5

7: $E \wedge G$ assumption

. . .

8: $E \wedge (F \vee G)$

9: $E \wedge (F \vee G)$ $\vee$ elim 1,2-6,7-8