

**Exercise 1:** Give formation sequences of the following

1.  $(\neg p_2 \rightarrow (p_3 \vee (p_1 \leftrightarrow p_2))) \wedge \neg p_3$

Let

$$\{\phi_i\} = \{p_1, p_2, p_3,$$

$$\neg p_2, \neg p_3, (p_1 \leftrightarrow p_2),$$

$$(p_3 \vee (p_1 \leftrightarrow p_2)), (\neg p_2 \rightarrow (p_3 \vee (p_1 \leftrightarrow p_2))), (\neg p_2 \rightarrow (p_3 \vee (p_1 \leftrightarrow p_2))) \wedge \neg p_3\}$$