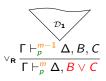
Exercises for Lecture 4

1. Prove that the following are derivable:

$$\triangleright (a \to b) \to ((a \land (b \to \bot)) \to \bot)
\triangleright ((a \land (b \to \bot)) \to \bot) \to ((a \to \bot) \lor b)$$

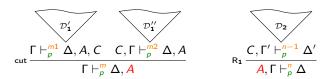
- 2. Prove the following cases of the Principal Lemma:
 - \triangleright The cut formula is $B \lor C$ and it is principal in both derivations:





Exercises for Lecture 4

The cut formula is A and it is principal in the leftmost derivation, with deg(C) < p:
</p>



 \triangleright The cut formula is $\forall xB$ and it is principal in both R_1 and R_2

