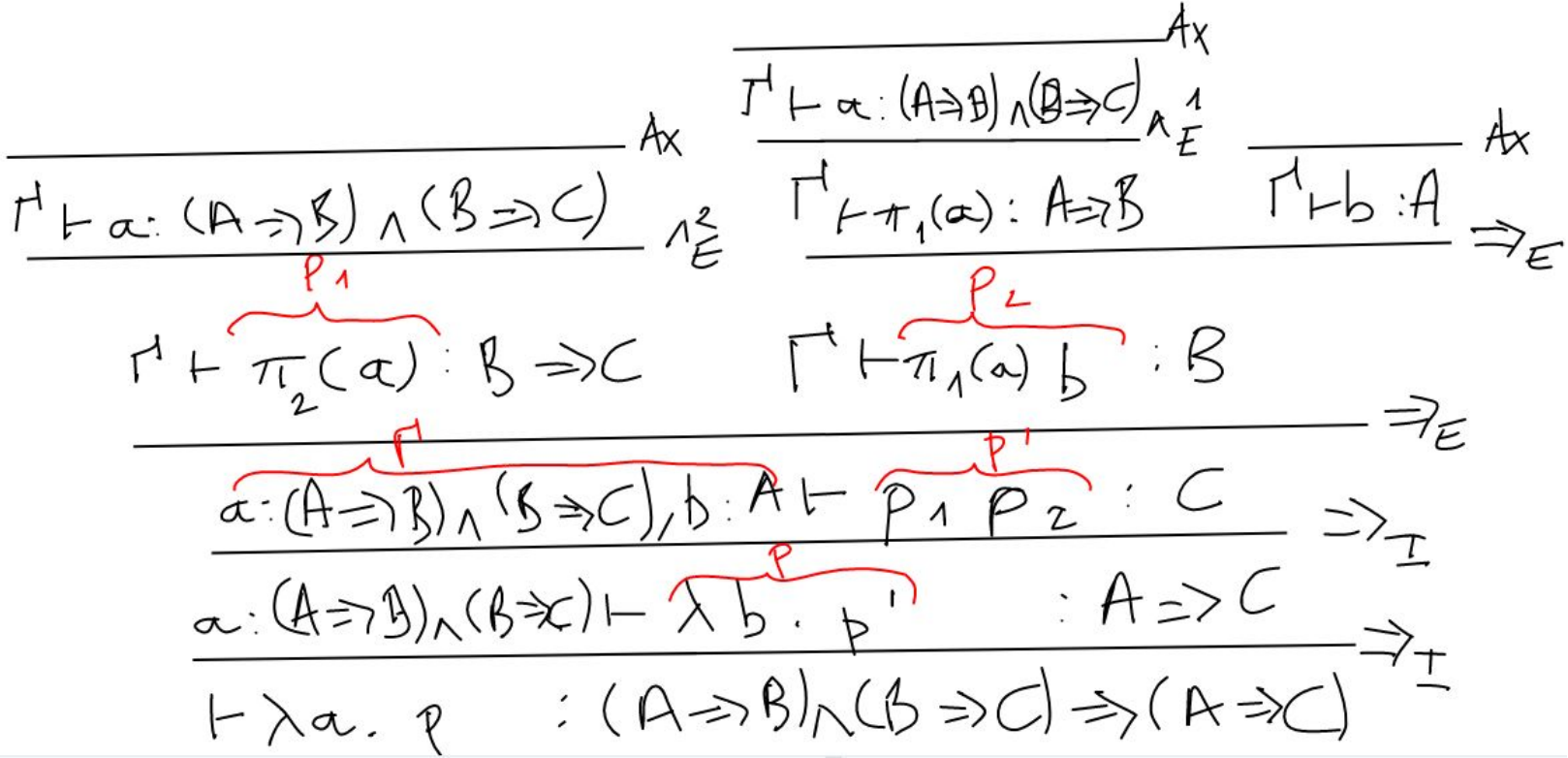
Exercice 1, Question 1a

$$\dfrac{\dfrac{}{A \vdash A}\,Ax}{\vdash A \Rightarrow A}\,\Rightarrow_I$$

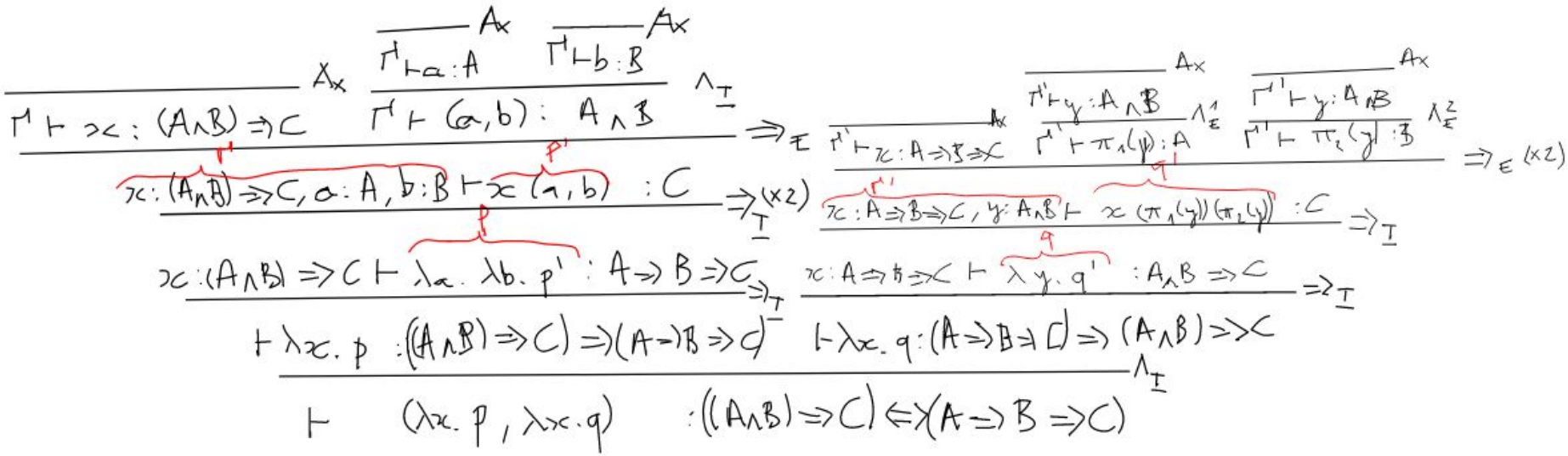
$$\dfrac{\dfrac{}{a : A \vdash a : A}\,Ax}{\vdash \lambda a . a : A \Rightarrow A}\,\Rightarrow_I$$

Exercice 1, Question 1b

$\lambda a.\ \lambda b.\ (\pi_2(a))\,((\pi_1(a))\,b)$



Exercice 1, Question 2



$$(\lambda x.\lambda a.\lambda b.\, x\,(a,b),\ \lambda x.\lambda y.\, x(\pi_1(y))(\pi_2(y)))$$

Exercice 1, Question 3d