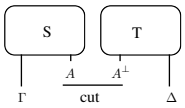
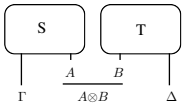
- *An A-axiom link is a proof net with output formulae $A, A^{\perp}$, written as*

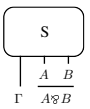
- *If S is a proof net with output formulae A, Γ and T is a proof net with output formulae $A^{\perp}, \Delta$, then adding an A-cut link between A and $A^{\perp}$ yields a proof net with output formulae Γ, Δ written as*



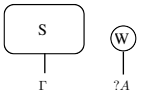
- *If S is a proof net with output formulae A, Γ and T is a proof net with output formulae B, Δ, then adding an A-B-times link between A and B yields a proof net with output formulae $\Gamma, A \otimes B, \Delta$ written as*



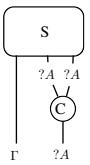
- *If S is a proof net with output formulae Γ, A, B, then adding an A-B-par link between A and B yields a proof net with output formulae $\Gamma, A \parr B$ written as*



- *If S is a proof net with output formulae Γ, then adding an A-weakening link yields a proof net with output formulae $\Gamma, ?A$ written as*

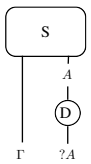


- *If S is a proof net with output formulae $\Gamma, ?A, ?A$, then adding an A-n-contraction link yields a proof net with output formulae $\Gamma, ?A$ written as*

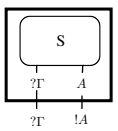


We say that $?A, \ldots, ?A$ are the inputs of the contraction node, and the conclusion formula $?A$ is the output of the contraction node.

- *If S is a proof net with output formulae Γ, A, then adding an A-dereliction link yields a proof net with output formulae $\Gamma, ?A$ written as*

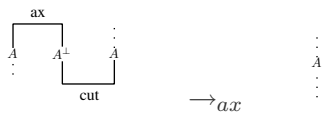


- *If S is a proof net with output formulae $?\Gamma, A$, then adding an A-$?\Gamma$-box link yields a proof net with output formulae $?\Gamma, !A$ written as*

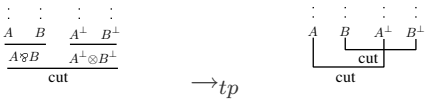


Definition 3.4.2 *The cut-elimination procedure over PN is performed via the rewrite relation defined as follows:*

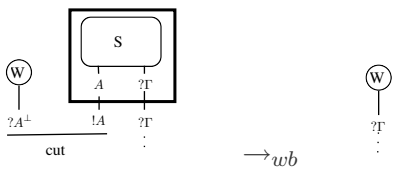
- *axiom:*



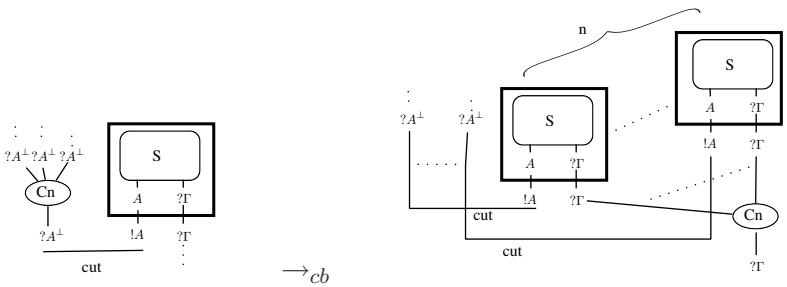
- *times-par:*



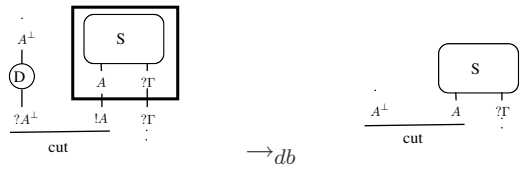
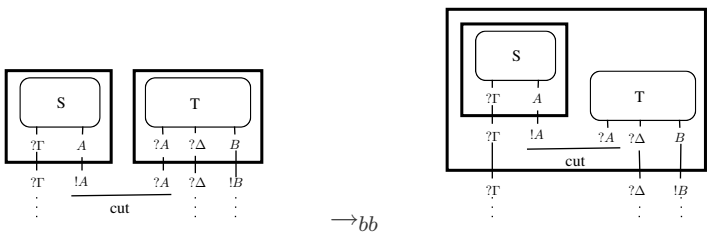
- *weakening-box:*



- *contraction-box:*



- *dereliction-box:*



- *box-box:*