



**Definition 1 (Formulae)**

$$\begin{aligned}
 P &= p \mid \top^+ \mid \perp^+ \mid A \wedge^+ B \mid A \vee^+ B \\
 N &= p^\perp \mid \top^- \mid \perp^- \mid A \wedge^- B \mid A \vee^- B \\
 A, B &= P \mid N
 \end{aligned}$$

**Definition 2 (System)**

$\frac{\Gamma \vdash [A]\Delta \quad \Gamma \vdash [B]\Delta}{\Gamma \vdash [A \wedge^+ B]\Delta} \quad \frac{\Gamma \vdash [A_i]\Delta}{\Gamma \vdash [A_1 \vee^+ A_2]\Delta}$
$\frac{}{\Gamma \vdash [p]\Delta} \Gamma \models_{\tau} p \quad \frac{}{\Gamma \vdash [\top^+]\Delta}$
$\frac{\Gamma \vdash N \mid \Delta}{\Gamma \vdash [N]\Delta} \text{ } N \text{ not positive}$
$\frac{\Gamma \vdash A, \Pi \mid \Delta \quad \Gamma \vdash B, \Pi \mid \Delta}{\Gamma \vdash A \wedge^- B, \Pi \mid \Delta} \quad \frac{\Gamma \vdash A_1, A_2, \Pi \mid \Delta}{\Gamma \vdash A_1 \vee^- A_2, \Pi \mid \Delta}$
$\frac{}{\Gamma \vdash \top^-, \Pi \mid \Delta} \quad \frac{\Gamma \vdash \Pi \mid \Delta}{\Gamma \vdash \perp^-, \Pi \mid \Delta}$
$\frac{\Gamma \vdash \Pi \mid \Delta, P}{\Gamma \vdash P, \Pi \mid} P \text{ positive} \quad \frac{\Gamma, p \vdash \Pi \mid \Delta}{\Gamma \vdash p^\perp, \Pi \mid} p^\perp \text{ negative literal}$
$\frac{\Gamma \vdash [P]\Delta, P}{\Gamma \vdash \mid \Delta, P} \quad \frac{}{\Gamma \vdash \mid \Delta} \Gamma \models_{\tau}$