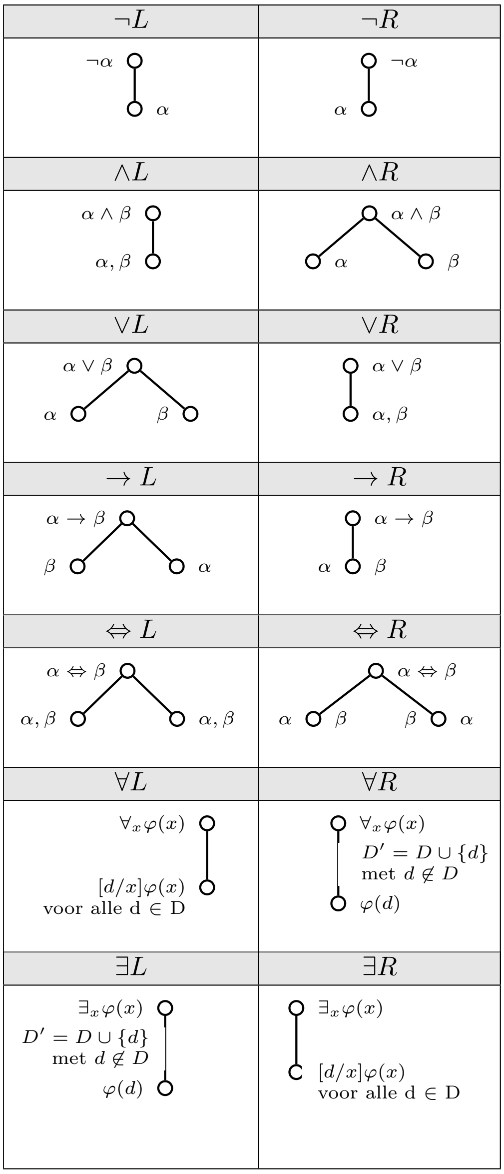
# Grondslagen van de Informatica I
# Formularium

## Semantische Tableaus




## Afleidingen

### $\wedge$

$$\frac{p \wedge q}{p}\ \wedge\mathrm{E} \qquad \frac{p \wedge q}{q}\ \wedge\mathrm{E}$$

$$\frac{p \quad q}{p \wedge q}\ \wedge\mathrm{I}$$

### $\vee$

$$\frac{p}{p \vee q}\ \vee\mathrm{I} \qquad \frac{q}{p \vee q}\ \vee\mathrm{I}$$

$$\frac{p \vee q \quad \begin{matrix}(1)\\ p\\ \vdots\\ r\end{matrix} \quad \begin{matrix}(2)\\ q\\ \vdots\\ r\end{matrix}}{r}\ \vee\mathrm{E}[-1,-2]$$

### $\rightarrow$

$$\frac{\begin{matrix}(1)\\ p\\ \vdots\\ q\end{matrix}}{p \rightarrow q}\ \rightarrow\mathrm{I}[-1] \qquad \frac{p \quad p \rightarrow q}{q}\ \rightarrow\mathrm{E}$$

### $\neg$

$$\frac{p \quad \neg p}{q}\ \neg\mathrm{E}$$

$$\frac{\begin{matrix}(1)\\ q\\ \vdots\\ p\end{matrix} \quad \begin{matrix}(1)\\ q\\ \vdots\\ \neg p\end{matrix}}{\neg q}\ \neg\mathrm{I}[-1] \qquad \frac{\begin{matrix}(1)\\ \neg q\\ \vdots\\ p\end{matrix} \quad \begin{matrix}(1)\\ \neg q\\ \vdots\\ \neg p\end{matrix}}{q}\ \neg\mathrm{E}*[-1]$$

### $\forall$

$$\frac{\varphi(d)}{\forall_x \varphi(x)}\ \forall\mathrm{I} \qquad \frac{\forall_x \varphi(x)}{\varphi(d)}\ \forall\mathrm{E}$$

### $\exists$

$$\frac{\varphi(d)}{\exists_x \varphi(x)}\ \exists\mathrm{I} \qquad \frac{\exists_x \varphi(x) \quad \begin{matrix}(1)\\ \varphi(d)\\ \vdots\\ r\end{matrix}}{r}\ \exists\mathrm{E}[-1]$$