$$\frac{}{\Gamma \vdash \texttt{true} : \text{bool}} \qquad \frac{}{\Gamma \vdash \texttt{false} : \text{bool}}$$

$$\frac{n \in \mathbb{Z}}{\Gamma \vdash n : \text{int}} \qquad \frac{}{\Gamma \vdash [] : \alpha\ \text{list}}$$

$$\frac{\Gamma \vdash e_1 : \text{int} \qquad \Gamma \vdash e_2 : \text{int}}{\Gamma \vdash e_1 + e_2 : \text{int}} \qquad \frac{\Gamma \vdash e_1 : \text{int} \qquad \Gamma \vdash e_2 : \text{int}}{\Gamma \vdash e_1 - e_2 : \text{int}}$$

$$\frac{\Gamma \vdash e_1 : \text{int} \qquad \Gamma \vdash e_2 : \text{int}}{\Gamma \vdash e_1 * e_2 : \text{int}} \qquad \frac{\Gamma \vdash e_1 : \text{int} \qquad \Gamma \vdash e_2 : \text{int}}{\Gamma \vdash e_1 / e_2 : \text{int}}$$

$$\frac{\Gamma \vdash e_1 : \alpha \qquad \Gamma \vdash e_2 : \alpha}{\Gamma \vdash e_1 = e_2 : \text{bool}}$$

$$\frac{\Gamma \vdash e_1 : \alpha \qquad \Gamma \vdash e_2 : \alpha\ \text{list}}{\Gamma \vdash e_1 :: e_2 : \alpha\ \text{list}}$$

$$\frac{\Gamma \vdash e_1 : \text{bool} \qquad \Gamma \vdash e_2 : \alpha \qquad \Gamma \vdash e_3 : \alpha}{\Gamma \vdash \texttt{if}\ e_1\ \texttt{then}\ e_2\ \texttt{else}\ e_3 : \alpha}$$

$$\frac{\Gamma(e_1) = \alpha}{\Gamma \vdash e_1 : \alpha}(\text{monomorphic}) \qquad \frac{\Gamma(e_1) = \forall \tau_1 \ldots \tau_n.\alpha}{\Gamma \vdash e_1 : \alpha[\vec{\tau}/\vec{\mu}]}(\text{polymorphic})$$

$$\frac{\Gamma \vdash e_1 : \alpha \to \beta \qquad \Gamma \vdash e_2 : \alpha}{\Gamma \vdash e_1\ e_2 : \beta}$$

$$\frac{\Gamma \vdash e_1 : \alpha \qquad \tau_1 \ldots \tau_n = \text{FV}_\Gamma(\alpha) \qquad \Gamma, v : \forall \tau_1 \ldots \tau_n.\alpha \vdash e_2 : \beta}{\Gamma \vdash \texttt{let}\ v = e_1\ \texttt{in}\ e_2 : \beta}$$

($\text{FV}_\Gamma(\alpha)$: α 中で自由な型変数で Γ 内の変数型に自由変数として現れていないものの列)

$$\frac{\Gamma, v : \alpha \vdash e_1 : \alpha \qquad \tau_1 \ldots \tau_n = \text{FV}_\Gamma(\alpha) \qquad \Gamma, v : \forall \tau_1 \ldots \tau_n.\alpha \vdash e_2 : \beta}{\Gamma \vdash \texttt{let rec}\ v = e_1\ \texttt{in}\ e_2 : \beta}$$