datatype listop = emptyList of exp
| isEmpty of exp
| cons of exp * exp
| car of exp * exp
| cdr of exp * exp

(emptyList) $\dfrac{T \vdash e : \tau}{T \vdash \text{emptyList}(e) : \text{LISTTY}(\tau)}$

(car) $\begin{cases} \dfrac{T \vdash e1 : \tau 1 \quad e2 : \text{LISTTY}(\tau 2) \quad \tau 1 = \tau 2}{T \vdash \text{cons}(e1\ e2) : \text{LISTTY}(\tau 1)} \\ \\ \dfrac{T \vdash e : \text{LISTTY}(\tau)}{T \vdash \text{car}(e) : \tau} \end{cases}$

(cdr) $\dfrac{T \vdash e : \text{LISTTY}(\tau)}{T \vdash \text{car}(e) : \text{LISTTY}(\tau)}$

(isEmpty) $\dfrac{T \vdash e : \text{LISTTY}(\tau)}{T \vdash \text{isEmpty}(e) : \text{bool}}$