Formation

$$\frac{\tau \text{ is a type}}{\text{List}(\tau) \text{ is a type}}$$

Introduction

$$\frac{\Gamma \vdash e_1 : \tau_1 \quad \Gamma \vdash e_2 : \text{LIST}(\tau) \quad \tau_1 = \tau_2}{\Gamma \vdash \text{CONS}(e_1, e_2) : \text{List}(\tau_1)} \quad \text{ConsList}$$

$$\frac{\tau \text{ is a type}}{\Gamma \vdash \text{EMPTY-LIST}(\tau) : \text{List}(\tau)} \quad \text{EmptyList}$$

Elimination

$$\frac{\Gamma \vdash e : \text{List}(\tau)}{\Gamma \vdash \text{NULL?}(e_1) : \text{BOOL}} \quad \text{NullList}$$

$$\frac{\Gamma \vdash e : \text{List}(\tau)}{\Gamma \vdash \text{CAR}(e) : \tau} \quad \text{CarList}$$

$$\frac{\Gamma \vdash e : \text{List}(\tau)}{\Gamma \vdash \text{CDR}(e) : \text{List}(\tau)} \quad \text{CdrList}$$