## Formation rules for Types

$$\frac{}{X \vdash X} \qquad \frac{}{\Gamma \vdash I} \qquad \frac{\Gamma \vdash T_1 \qquad \Gamma \vdash T_2}{\Gamma \vdash T_1 \oplus T_2} \qquad \frac{\Gamma \vdash T_1 \qquad \Gamma \vdash T_2}{\Gamma \vdash T_1 \otimes T_2} \qquad \frac{\Gamma \vdash T}{\Gamma \vdash T^\star} \qquad \frac{X \vdash T}{\Gamma \vdash \mu\, X.T}$$

## Formation rules for Values

$$\frac{}{\vdash e^{i\theta} : I} \qquad \frac{\vdash v_1 : T_1 \qquad \vdash v_2 : T_2}{\vdash v_1 \times v_2 : T_1 \otimes T_2} \qquad \frac{\vdash v : T_1}{\vdash inl\; v : T_1 \oplus T_2} \qquad \frac{\vdash v : T_2}{\vdash inr\; v : T_1 \oplus T_2} \qquad \frac{\vdash v : T}{\vdash \overline{v} : T^\star} \qquad \frac{\vdash v : T[\mu\, X.T/X]}{\vdash fold\; v : \mu\, X.T}$$

$$\frac{\vdash v_1 : T \qquad \vdash v_2 : T}{\vdash v_1 + v_2 : T} \qquad \frac{\vdash v_1 : T^\star \qquad \vdash v_2 : T}{\vdash v_1, v_2 : T^\star \otimes T} \qquad \frac{\vdash v_1 : T_1 \qquad \vdash v_2 : T_1^\star \otimes T_2}{\vdash v_1\; v_2 : T_2} \qquad \frac{\vdash v_1 : T_1^\star \otimes T_2 \qquad \vdash v_2 : T_2^\star \otimes T_3}{\vdash v_1 \,\fatsemi\, v_2 : T_1^\star \otimes T_3}$$