

**Definition** (Symmetry, asymmetry, and antisymmetry of endorelations)  
 An endorelation  $R : \mathbf{A} \rightarrow \mathbf{A}$  is *symmetric* if

$$\frac{x R y}{y R x},$$

is *asymmetric* if

$$\frac{x R y \quad y R x}{\perp},$$

and is *antisymmetric* if

$$\frac{x R y \quad y R x}{x = y}.$$