

**Definition** (Properties of endorelations). An endorelation  $R \subseteq \mathbf{A} \times \mathbf{A}$  is:

▷ *Symmetric* if for  $x, x' \in \mathbf{A}$ :

$$\frac{\langle x, x' \rangle \in R}{\langle x', x \rangle \in R}$$

▷ *Reflexive* if  $\forall x \in \mathbf{A}: \langle x, x \rangle \in R$ ;

▷ *Transitive* if for  $x, x', x'' \in \mathbf{A}$ :

$$\frac{\langle x, x' \rangle \in R \quad \langle x', x'' \rangle \in R}{\langle x, x'' \rangle \in R}$$