

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

- ▷ *Symmetric* if for all  $x, x' \in \mathbf{A}$  it holds  $\langle x, x' \rangle \in \mathbf{R} \Leftrightarrow \langle x', x \rangle \in \mathbf{R}$ ;
- ▷ *Reflexive* if for all  $x \in \mathbf{A}$  it holds  $\langle x, x \rangle \in \mathbf{R}$ ;
- ▷ *Transitive* if for all  $\langle x, x' \rangle \in \mathbf{R}$  and  $\langle x', x'' \rangle \in \mathbf{R}$ , we have  $\langle x, x'' \rangle \in \mathbf{R}$ .