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 $\langle x, x'' \rangle \in \mathbf{R}$.