

Definition (Symmetry, asymmetry, and antisymmetry)

An endorelation $R : A \rightarrow A$ 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

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