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

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

is *asymmetric* if

$$\frac{x\,R\,y \quad y\,R\,x}{\;\bot\;},$$

and is *antisymmetric* if

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