Definition (Intersection of design problems). Given design problems $f : A \nrightarrow B$ and $g : A \nrightarrow B$, their *intersection* is denoted $(f \wedge g) : A \nrightarrow B$, defined by:

$$(f \wedge g) : A^{\mathrm{op}} \times B \to_{\mathbf{Pos}} \mathbf{Bool}$$

$$\langle a^*, b \rangle \mapsto f(a^*, b) \wedge g(a^*, b),$$

and represented as in **??**.