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

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

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

and represented as in ??.