Note that below defined domain and image of a funcoid are not the same as it source and destination.

I will denote $\mathrm{GR}(A; B; f) = f$ for any morphism $(A; B; f)$ of either **Set** or **Rel**. (See definitions of **Set** and **Rel** below.)

I will denote $\langle f\rangle^* = \langle \mathrm{GR}\, f\rangle^*$ and $[f]^*$=$[\mathrm{GR}\, f]^*$ for any morphism f of either **Set** or **Rel**.

1.9. Unusual notation

In the chapter Common knowledge, part 1 (which you may skip reading if you are already knowledgeable) some non-standard notation is defined. I summarize here this notation for the case if you choose to skip reading that chapter:

Partial order is denoted as $\sqsubseteq$.

Meets and joins are denoted as $\sqcap$, $\sqcup$, $\bigsqcap$, $\bigsqcup$.

I call element b *substractive* from an elements a (of a distributive lattice $\mathfrak{A}$) when the difference $a \setminus b$ exists. I call b *complementive* to a when there exists $c \in \mathfrak{A}$ such that $b \sqcap c = \bot$ and $b \sqcup c = a$. We will prove that b is complementive to a iff b is substractive from a and $b \sqsubseteq a$.

Definition 2. Call a and b of a poset $\mathfrak{A}$ *intersecting*, denoted $a \not\asymp b$, when there exists a non-least element c such that $c \sqsubseteq a \wedge c \sqsubseteq b$.

Definition 3. $a \asymp b \stackrel{\text{def}}{=} \neg(a \not\asymp b)$.

Definition 4. I call elements a and b of a poset $\mathfrak{A}$ *joining* and denote $a \equiv b$ when there are no non-greatest element c such that $c \sqsupseteq a \wedge c \sqsupseteq b$.

Definition 5. $a \not\equiv b \stackrel{\text{def}}{=} \neg(a \equiv b)$.

Obvious 6. $a \not\asymp b$ iff $a \sqcap b$ is non-least, for every elements a, b of a meet-semilattice.

Obvious 7. $a \equiv b$ iff $a \sqcup b$ is the greatest element, for every elements a, b of a join-semilattice.

I extend the definitions of pseudocomplement and dual pseudocomplement to arbitrary posets (not just lattices as it is customary):

Definition 8. Let $\mathfrak{A}$ be a poset. *Pseudocomplement* of a is

$$\max\left\{\frac{c \in \mathfrak{A}}{c \asymp a}\right\}.$$

If z is the pseudocomplement of a we will denote $z = a^*$.

Definition 9. Let $\mathfrak{A}$ be a poset. *Dual pseudocomplement* of a is

$$\min\left\{\frac{c \in \mathfrak{A}}{c \equiv a}\right\}.$$

If z is the dual pseudocomplement of a we will denote $z = a^+$.