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|--|---------------------|--|
| flagDom($_ $ zero) | ==: | $\mathbf{1}$ |
| flagDom($P $ one) | ==: | dom(P) |
| Attr(P, Q, R, S) | Θ : | [RUniq(P), dom(P) \subseteq Q , img(P) \subseteq R , $Q \subseteq$ flagDom(P, S)] |
| keyPIH($_ $) | ==: | \emptyset |
| keyPIH($[P, Q R]$) | ==: | $P \cap$ img(Q) \cup keyPIH($[P R]$) |
| isKeyPIH(P) | \leftrightarrow : | $\emptyset_keyPIH(P)$ |
| KeyPIH($[P]$) | Θ : | Coll(P) |
| KeyPIH($[P, Q R]$) | Θ : | [$\emptyset_ \cap(P, \text{img}(Q))$ KeyPIH($[P R]$)] |
| keyFunc($[P], Q, R S$) | ==: | succth(Q, R, S) $\circ P^{\sim}$ |
| keyFunc($[P, Q R], S, T $ decr(W)) | ==: | th(S, T, W) $\circ P^{\sim} \cap$ keyFunc($[Q R], S, T, W$) |
| Key($[P, Q, R S]$) | Θ : | [RUniq(keyFunc($S, Q, R, 0$)) KeyPIH($[P S]$)] |
| IBoth(P, Q) | ==: | rA(P) \cap rA(Q) |
| NoLLBoth(P, Q, R) | \leftrightarrow : | $\emptyset_ \cap(IBoth(Q, R), P)$ |
| NoLRBoth(P, Q, R) | \leftrightarrow : | NoLLBoth(P, Q, R^{\sim}) |
| NoTogether(P, Q) | \leftrightarrow : | $\emptyset_ \cap(rA(P) \cap IA(P), Q)$ |
| RXcl(P, Q) | \leftrightarrow : | $\emptyset_ \cap(\text{mult}(Q), IA(P))$ |
| LXcl(P, Q) | \leftrightarrow : | RXcl(P, Q^{\sim}) |
| NoTwice($[P]$) | Θ : | true(P) |
| NoTwice($[P, Q R]$) | Θ : | [RUniq(P, Q), LUniq(P, Q), NoTogether(P, Q), RXcl(P, Q), LXcl(P, Q) NoTwice($[P R]$)] |
| NoLRBoth($[P, Q]$) | Θ : | true($[P, Q]$) |
| NoLRBoth($[P, Q, R S]$) | Θ : | [NoLLBoth(P, Q, R), NoLRBoth(P, Q, R), NoLRBoth(P, R, Q) NoLRBoth($[P, Q S]$)] |
| NoBoth($[P]$) | Θ : | true(P) |
| NoBoth($[P, Q R]$) | Θ : | [NoLRBoth(P, Q, Q) {NoLRBoth($[P, Q R]$), NoBoth($[P R]$)} |
| PlaceHolders($[P, Q R]$) | Θ : | {NoTwice($[P, Q R]$), NoBoth($[P, Q R]$)} |
| Entity(P, Q) | Θ : | [Coll(Q), Disj(Q, P)] |
| IsA($[P, Q, R]$) | Θ : | [ℓ [$R \subseteq P$, Disj(R, Q)] |
| IsA($[P, Q, R, S T]$) | Θ : | [ℓ [$R \subseteq S$ IsA($[P, Q, S T]$)] |
| DotDot(P, Q, R, S) | Θ : | [Betw($Q \Delta P, R, S \Delta P$), $S \subseteq IA(R)$, |

HdTI(p_1, p_2, p_3, p_4)
PlaceHolders($[p_5, p_6, p_7, p_8, p_9]$)
Attr(p_9, p_6, p_3)
MandAttr(p_7, p_6, p_3)
MandAttr(p_8, p_6, p_3)
Key($[p_5, p_1, p_2, p_7, p_8]$)