

Theorema 2.0: A First Tour

NB reached List of cells reached CellGroupData reached List of cells reached
NullCell reached

We consider “proving”, “computing”, and “solving” as the three basic mathematical activities.

CellGroupData reached List of cells reached

1 Proving

We want to prove

$$(\forall_x (P[x] \vee Q[x])) \wedge (\forall_y (P[y] \Rightarrow Q[y])) \Leftrightarrow (\forall_x Q[x]).$$

To prove a formula like the above, we need to enter it in the context of a Theorema environment.

1.1 Proposition (First Test, 2014)

Iff And Forall RINGSIMPRNG Null x Or P Null x Q Null x Forall
RINGSIMPRNG Null y Implies P Null y Q Null y Forall RINGSIMPRNG
Null x Q Null x

Cell reached CellGroupData reached List of cells reached Cell reached Cell
reached Cell reached Cell reached Cell reached Cell reached Cell reached Cell
reached Cell reached Cell reached Cell reached CellGroupData reached List of
cells reached

2 Computing

CellGroupData reached List of cells reached Cell reached

2.0.1 Global Declaration

$$\forall a, b$$

2.1 [?]

$$\text{Forall RNG} \text{Unexpectednumberofarguments} \text{If} \text{DefTma} 2 \text{tex'Private'tmaToInputOperator[Theorema'La} \\ \text{STEP RNG} \text{Unexpectednumberofarguments} \text{And} \text{LessSubscriptNullaNulliSubscriptNullbNulliForall RNG} \\ \text{STEP RNG} \text{Unexpectednumberofarguments} \text{EqualSubscriptNullaNulljSubscriptNullbNullj}$$

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Cell reached CellGroupData reached List of cells reached Cell reached Cell
reached CellGroupData reached List of cells reached Cell reached CellGroup-
Data reached List of cells reached Cell reached

2.1.1 Global Declaration

$$\bigvee_K$$

2.1.2 Global Declaration

$$\text{Mon}[\mathbf{K}] := \Delta_M$$

2.1.3 Global Declaration

$$\forall_{m1,m2}$$

2.2 [?]

Forall RNGunexpectednumberofargumentsEqualDefTma2tex‘Private‘tmaToInputOperator[Theorema‘Language‘TimesTM]]unexpectednumberofargumentsTupleTma2tex‘Private‘tmaToInputOperator[Theorema‘Language‘DomainOperationTM[Theorema‘Language‘DomainOperationTM[Infinity, True, False], Theorema‘Language‘PlusTM]]unexpectednumberofarguments

2.3 [?]

Forall RNG *unexpectednumberofargumentsIfDefTma2tex'Private'tmaToInputOperator[Theorema'Language'LessTM]]unexpectednumberofargumentsTma2tex'Private'tmaToInputOperator[Theorema'Language'LessTM]]*

■Cell reached CellGroupData reached List of cells reached Cell reached Cell reached CellGroupData reached List of cells reached Cell reached Cell reached CellGroupData reached List of cells reached Cell reached Cell reached CellGroupData reached List of cells reached

3 Set Theory

CellGroupData reached List of cells reached Cell reached

3.0.1 Global Declaration

$\forall_{x,y}$

3.1 [?]

Forall RNG *unexpectednumberofargumentsEqualDefSubsetEqualNullxNullyForallRNGSIMPRNGNullzImpliesElementNullzNullxElementNullzNully*

■Cell reached

3.2 Proposition (transitivity of \subseteq)

Forall RNG *unexpectednumberofargumentsImpliesAndSubsetEqualNullaNullbSubsetEqualNullbNullcSubsetEqualNullaNullc*

Cell reached CellGroupData reached List of cells reached Cell reached Cell reached CellGroupData reached List of cells reached Cell reached Cell reached