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Module No1.
Import Unicode.Utf8. (*We first give the axioms of Principia for the prop
ositional calculus in *1.*)

Axiom MP1_1 : ∀  P Q : Prop,
  (P → Q) → P → Q. (*Modus ponens*)

  (**1.11 ommitted: it is MP for propositions containing variables. Likewi
se, ommitted the well-formedness rules 1.7, 1.71, 1.72*)

Axiom Taut1_2 : ∀ P : Prop,
  P ∨ P→ P. (*Tautology*)

Axiom Add1_3 : ∀ P Q : Prop,
  Q → P ∨ Q. (*Addition*)

Axiom Perm1_4 : ∀ P Q : Prop,
  P ∨ Q → Q ∨ P. (*Permutation*)

Axiom Assoc1_5 : ∀ P Q R : Prop,
  P ∨ (Q ∨ R) → Q ∨ (P ∨ R).

Axiom Sum1_6: ∀ P Q R : Prop,
  (Q → R) → (P ∨ Q → P ∨ R). (*These are all the propositional axioms of P
rincipia Mathematica.*)

Axiom Impl1_01 : ∀ P Q : Prop,
  (P → Q) = (~P ∨ Q). (*This is a definition in Principia: there → is a define
d sign and ∨, ~ are primitive ones. So we will use this axiom to switch bet
ween disjunction and implication.*)

End No1.
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