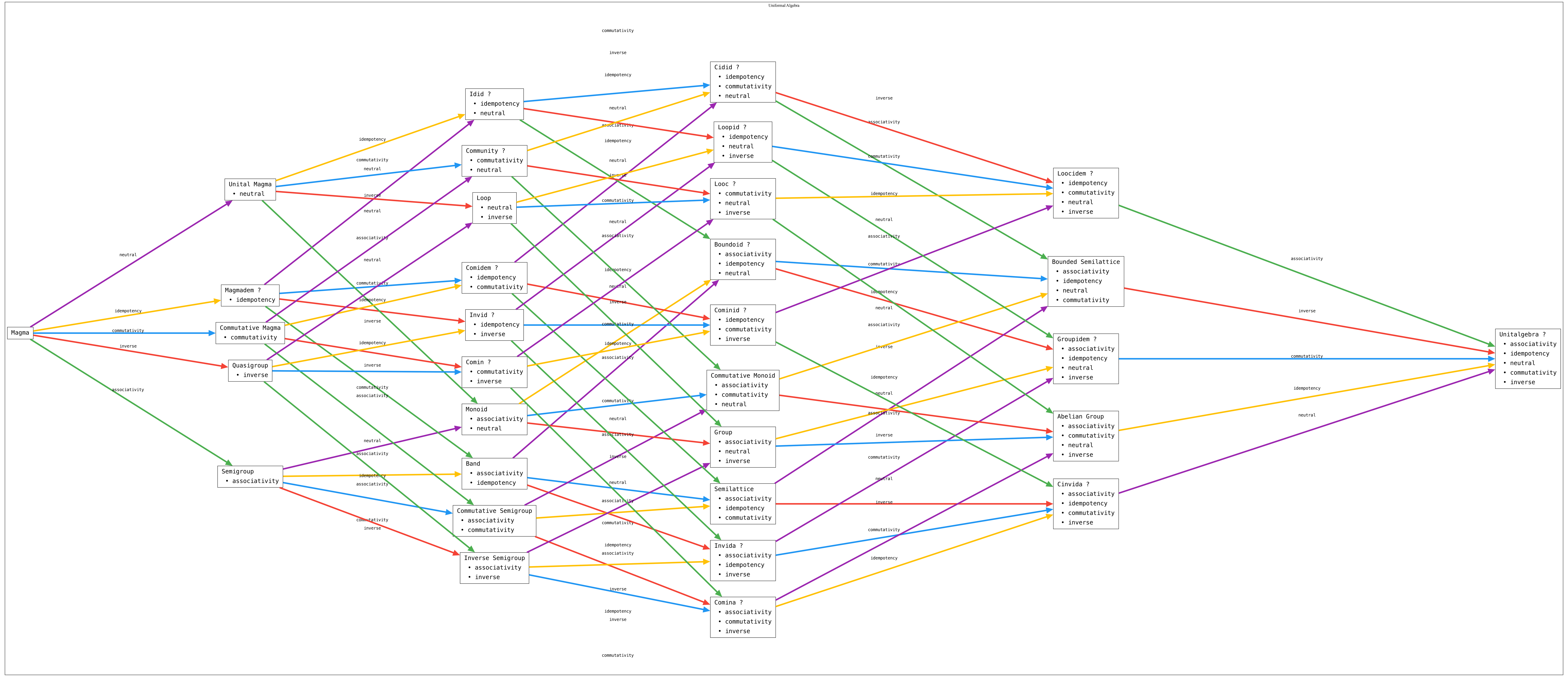

Total: If ⊕ is total, then the result of a ⊕ b belongs to the domain of a and b
Associative: If ⊕ is associative, then a ⊕ (b ⊕ c) = (a ⊕ b) ⊕ c
Commutative: If ⊕ is commutative, then a ⊕ b = b ⊕ a
Identity: If id is an identity for ⊕, then a ⊕ id = id ⊕ a = a.
Inverse: If ¬ is an inverse for ⊕ and id, then a ⊕ ¬a = ¬a ⊕ a = id.
Reflexivity: a ≤ a, i.e. every element is related to itself.
Irrelexivity: a < a, i.e. no element is related to itself.
Antisymmetry: if a ≤ b and b ≤ a then a == b i.e. no two distinct elements precede each other.
Asymmetry: if a < b and not b < a
Transitivity: if a ≤ b and b ≤ c then a ≤ c
Idompotency: If ⊕ is idempotent, then a ⊕ a = a. If f is idempotent, then f(f(a)) = f(a)
Join: Every pair of elements has a unique supremum/least upper bound. Join is written as ∨
Meet: Every pair of elements has a unique infimum/greatest lower bound. Meet is written as ∧
Distributive: If ⊕ and ⊙ distribute, then a ⊙ (b ⊕ c) = (a ⊙ b) ⊕ (a ⊙ c) and (a ⊕ b) ⊙ c = (a ⊙ c) ⊕ (b ⊙ c).
Implication: 'a → a = 1' • 'a ∧ (a → b) = a ∧ b' • 'b ∧ (a → b) = b' • 'a → (b ∧ c) = (a → b) ∧ (a → c)'
Law of excluded middle: b ∨ (¬b) = 1
Derivative operator: D
Existential quantifier: ∃