Gleiche Quantifier Können vertauscht werden, gemischte nicht

Precedence rules

▶ ¬ is applied before ∧ : ¬A ∧ B = (¬A) ∧ B

▶ ∧ is applied before ∨ :

A ∧ B ∨ C = (A ∧ B) ∨ C

▶ →, ↔, ⊕ are always applied last

A => B == not B or A

Simplifying Compound Propositions

▶ Commutative laws

• A1 ∨ A2 ≡ A2 ∨ A1

• A1 ∧ A2 ≡ A2 ∧ A1

▶ Associative laws

• A1 ∨ (A2 ∨ A3) ≡ (A1 ∨ A2) ∨ A3

• A1 ∧ (A2 ∧ A3) ≡ (A1 ∧ A2) ∧ A3

▶ Distributive laws

• A1 ∨ (A2 ∧ A3) ≡ (A1 ∨ A2) ∧ (A1 ∨ A3)

• A1 ∧ (A2 ∨ A3) ≡ (A1 ∧ A2) ∨ (A1 ∧ A3)

▶ Absorptions laws

• A1 ∨ (A1 ∧ A2) ≡ A1

• A1 ∧ (A1 ∨ A2) ≡ A1

▶ De Morgan’s laws

• ¬(A1 ∨ A2) ≡ ¬A1 ∧ ¬A2

• ¬(A1 ∧ A2) ≡ ¬A1 ∨ ¬A2

▶ Double negative law

• ¬¬A ≡ A