#### Example: Logical equivalence of statements

Let The statements are A1 and A2 be statements with different in content, so it is A1≔ A “It’s dark at night.” are logi-

cally equivalent (because both are true), so

Many authors use the symbol = instead of ≡. At this point, however, we have deliberately In literature, statements that have the same truth value are often referred to as the same. chosen the above definition to avoid misunderstandings.

Logical operators (also called connectives) can be used to combine logical statements Logical operators into what are called propositional formulas or expressions. We distinguish five types of The five logical operators

discussed here are sym-

connectives. bols which stand in for the words “and”,“or”, Definition: Conjunction “not”, “if”, and “if and B.Let A and A B be statements. The conjunction (also called an and-operator or and-connec-B A ∧ B A AND B AB A only if”.

tive) of and is written as or or (abbreviated) . This is read “ and

”

A ∧ B is true exactly when (and only when) statements A ∧ B A and B are both true. If at least

one of the statements is false, then is also false.