### Definition: Logical Statement

A logical statement (or short statement) is a proposition by which it is possible to decide In computer science one often uses true or 1, and writes false or 0. In logic, one is generally whether it is true or false.

not interested in the content of a statement, but only in whether it is true or false. This is also called the truth value of a statement.

Example:

“Four is an odd number” is a false statement.

“Water is wet” is a true statement.

“X is an odd number” is also not a statement, because without additional information it4 x 3 x “Good day” is not a statement because this sentence is neither true nor false.

cannot be decided whether is even or odd. Only when we assign a number to does it become a statement that can be true or false. “ is an odd number” would accordingly be a true statement, while “ is an odd number” is a false statement.

Let A and B be statements. A ≡ BA and B are called logically equivalent if they have the sameA B Definition: Logical Equivalence of Statements

truth value. You write and say “ is logically equivalent to .”

Please note that the logical equivalence of statements does not refer to their content, but only to their truth value! The following example should illustrate this.