

THE CARROLLIAN MATRIX

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Introduction An important task of logic is the testing of arguments; that is, the assertion that a certain statement (called the conclusion) will follow from other statements (called premises). Following [3], p. 42, an argument is said to be valid if and only if the conjunction of the premises implies the conclusion. Therefore, the logician is concerned with two ingredients: A set of premises, and the set of valid conclusions which can be reached. The former is usually given, whereas the set of valid conclusions is not obvious. For example, "If it rains, then the ground will be wet," and, "It rains," have eight valid conclusions. They are:

It will rain *or* it will not rain.
 It will rain *or* the ground will be wet.
 It will not rain *or* the ground will be wet.
 It will rain *and* the ground will be wet.
 It will rain *or* the ground will not be wet.
 It will rain *iff* the ground will be wet.
 It will rain.
 The ground will be wet.

Also, there are eight invalid conclusions from this particular set of premises. They are:

It will rain *and* it will not rain.
 It will not rain *or* the ground will not be wet.
 It will not rain *and* the ground will be wet.
 It will not rain *iff* the ground will be wet.
 It will not rain *and* the ground will not be wet.
 It will rain *and* the ground will not be wet.
 It will not rain.
 The ground will not be wet.

And, as the number of premises increase, so do the number of valid and invalid conclusions.

Received March 26, 1969