Conjunction, Disjunction, and Negation...What About Implication?

Extending V for Implication

For equivalence \leftrightarrow

arphi	\leftrightarrow	$oldsymbol{\psi}$
1	1	1
1	0	0
0	0	1
0	1	0

Extending V for Implication

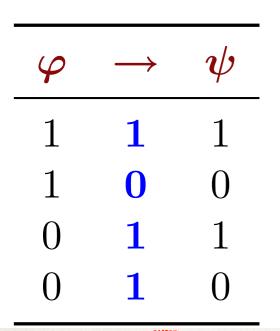
For equivalence \leftrightarrow

arphi	\leftrightarrow	$oldsymbol{\psi}$
1	1	1
1	0	0
0	0	1
0	1	0

For implication \rightarrow

arphi	\rightarrow	$oldsymbol{\psi}$
1	1	1
1	0	0
0	1	1
0	1	0

Let's Look at the Table for Implication More Closely



Why is it that whenever the antecedent is false, the **if...then** statement is always true *regardless of the truth value of the consequent*?

We are working with a particular kind of implication, called material implication Does the *if...then* statement

"If it rains, the soil gets wet"

contain a material implication?