Discrete Math: Arguments

Arguments: An "argument" is a sequence of statements. It consist of premises and a conclusion

Example: If John drinks beer, then John drinks alcohol
John drinks beer. ∴ (Therefore) John drinks alcohol.

2 premises and 1 conclusion
Arguments can have any number of premises, but the last statement is the conclusion

Logical Form
$p \to q$
$p$
$\therefore q$

Want to abstract from arguments, and consider logical form.

Argument Form: A sequence of statement forms. It consist of premises and a conclusion

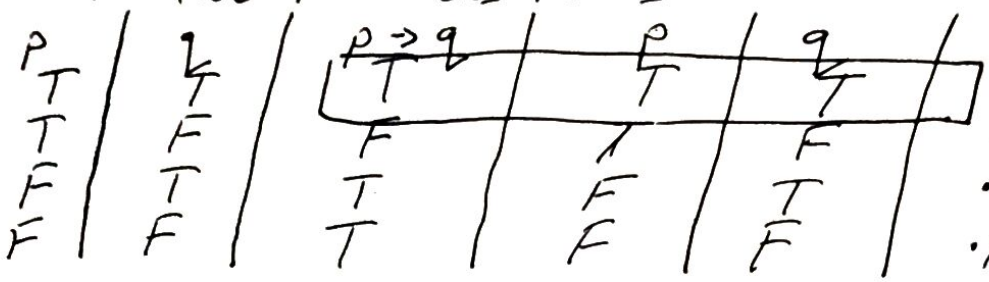
Argument Form
$p \to q$
$p$
$\therefore q$

} Known As Modus Ponens

Valid

If all premises are "T"
then truth value of conclusion is "T".

Truth Table for Modus Ponens

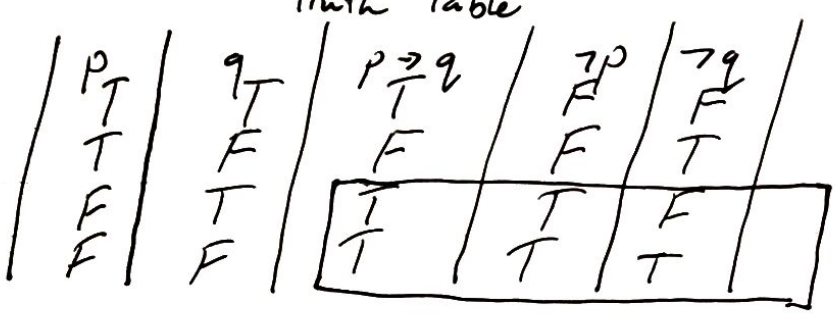



* Critical Row
- All Premises "T"
- Conclusion is "T"
- Modus Ponens is Valid

Example 2: If John drinks beer, then John drinks alcohol.
John doesn't drink beer.
∴ John doesn't drink alcohol

Logical Form
$p \to q$
$\neg p$
$\therefore \neg q$

Truth Table




> Critical Rows
3rd Row, Premises "T", Conc. "F"
3rd Row Not Valid