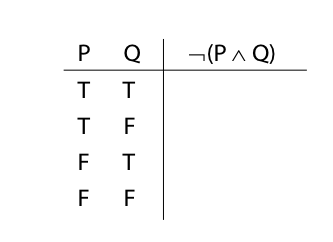
**PH133 Logic**  Lecture 2

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An argument is *logically valid* just if there’s no possible situation in which the premises are true and the conclusion false



Logical Validity

Argument 3

1. (P ∧ Q) ∨ R

2. P ∨ ¬P

Argument 3b

1.

2. P ∨ ¬P

Argument 4

1. P ∧ ¬P

2. (P ∧ Q) ∨ R

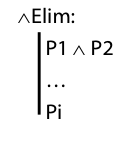
P ∨ ¬P is a *logical truth*

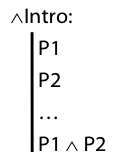
logical truth defined p. 568

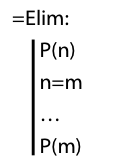
P ∧ ¬P is a *contradiction*

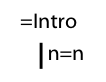
contradiction defined p. 564

Rules of proof

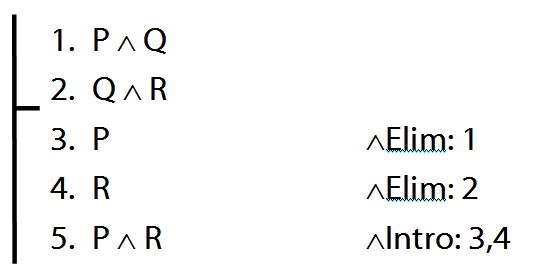






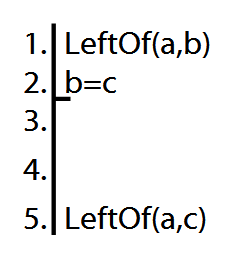
Proofs with conjunction (∧)

*example*



Proofs with identity

*example* (with missing justification)

**