

①

$A \vdash B$

A proves B

there is a proof
with premise A
& conclusion B

$A \models B$

A entails B

[argument w/ premise A
& conclusion B is valid

[no row in truth table s.t.
A true & B false

Two questions

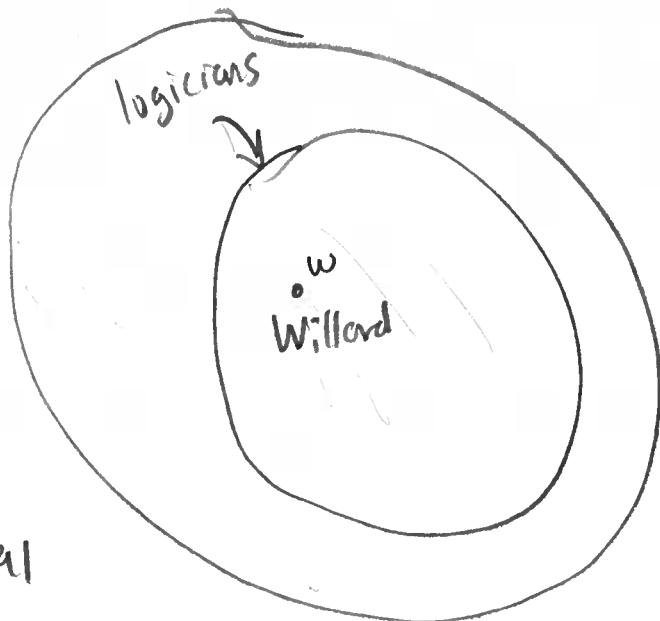
→ if $A \vdash B$, then is $A \models B$? "soundness"

if $A \models B$, then does $A \vdash B$? "completeness"

Soundness: do proofs give us truth?

Completeness: are true things always provable?

2



1	W
2	A
3	F

how to justify?

p.191

↑
people who wear
funny hats

p.194

- 1) Elsa is angry $\sim A(e)$
- 2) Gregor and Marybeth are angry $\sim A(g) \wedge A(m)$
- 3) if Elsa angry, then so are Gregor + Marybeth
 $A(e) \rightarrow (A(g) \wedge A(m))$

$\int_0^1 t^2 dt$ SAME AS $\int_0^1 \xi^2 d\xi$

$\frac{4}{2}$ same as 2

"No one is angry"

$$\forall x (\neg A(x)) \quad \neg (\exists x A(x))$$

"There is someone who is not happy"

$$\exists x (\neg H(x)) \quad \neg (\forall x H(x))$$