

# From Deductive to Inductive Logic

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# Arguments

I need to be at UMD by 11am.

∴ Lily needs to be at the bus-stop by 9am.

Ann will have salad or steak.




Ann will not have steak.

∴ Ann will have salad.

Ann brought her laptop to first three lectures.

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$$\times \frac{U}{\therefore L}$$

$$\checkmark \frac{A \vee S}{\neg S} \\ \hline \therefore A$$

$$\times \frac{((L_1 \wedge L_2) \wedge L_3)}{\therefore L_4}$$

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When we *evaluate* arguments, we are interested in two things:

1. Are the premises true?
2. *Supposing* that the premises true, what sort of support do the premises give to the conclusion?

An argument is **deductively valid** if and only if it is *impossible* that its conclusion is false while its premises are true.

An argument is **inductively strong** if and only if it is *improbable* that its conclusion is false while its premises are true, and it is not deductively valid.

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An argument is **inductively strong** if and only if it is *improbable* that its conclusion is false *while* its premises are true, and it is not deductively valid.