

# Introduction to Logical Reasoning

Lecture #5

*Argument Diagrams*

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# Assistant Office Hours

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Office hours for the course assistants have now been posted on the course website.

Do not hesitate to see any of us when you are struggling!

# Diagramming an Argument

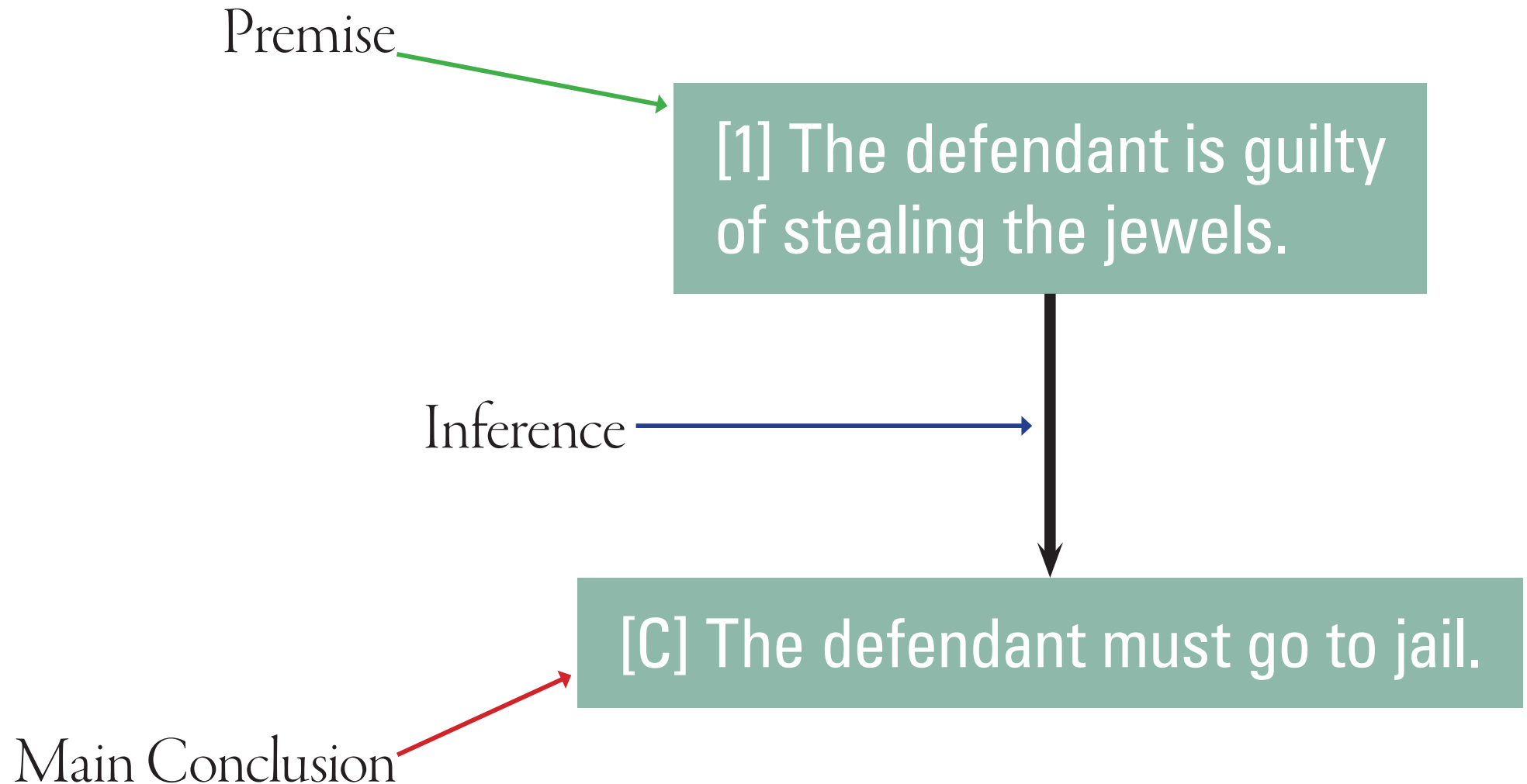
The defendant must go to jail because he is guilty of stealing the jewels.

[1] The defendant is guilty of stealing the jewels.

[C] The defendant must go to jail.

# Diagramming an Argument

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# Independent Premises

The defendant signed a confession,  
1 thus he is guilty of stealing the jewels.  
CI C

Furthermore, we know he was present at the scene of the crime.  
2

[1] The defendant  
signed a confession.

[2] The defendant was present  
at the scene of the crime.

[C] The defendant is guilty of stealing the jewels.

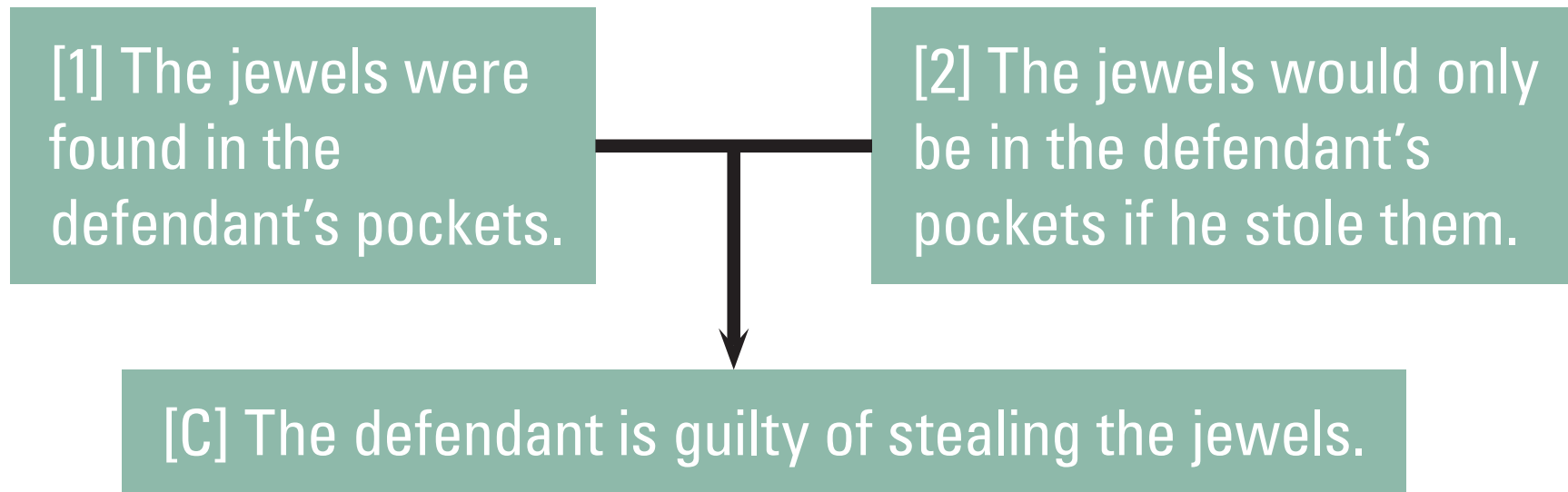
# Independent Premises

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An **independent premise** is a premise that does not depend on any other premises to provide support for its conclusion. So denying or removing an independent premise does *not* undermine the support that the conclusion may receive from those other premises.

# Dependent Premises

The jewels were found in the defendant's pockets, and they would only  
be there if he stole them. Therefore, he is guilty of stealing the jewels.  
1 2  
CI C



**Remember:** Break apart all *conjunctive* statements (like that first sentence above) by treating its conjuncts as separate statements within the argument. This means each conjunct gets its own box in the diagram. Also, once more, do *not*—I repeat: do **not**—break apart *disjunctive* and *hypothetical* statements in a similar fashion.

# Dependent Premises

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A **dependent premise** is a premise that does depend on at least one other premise to provide joint support for its conclusion. So denying or removing a dependent premise *does* undermine the support that its linked premises provides for the conclusion.



# Chain Arguments

The defendant was present at the scene of the crime because his fingerprints were on the safe. We know this since the forensic report says so.

C PI 1 PI 2

[2] The forensic report says the defendant's fingerprints were on the safe.



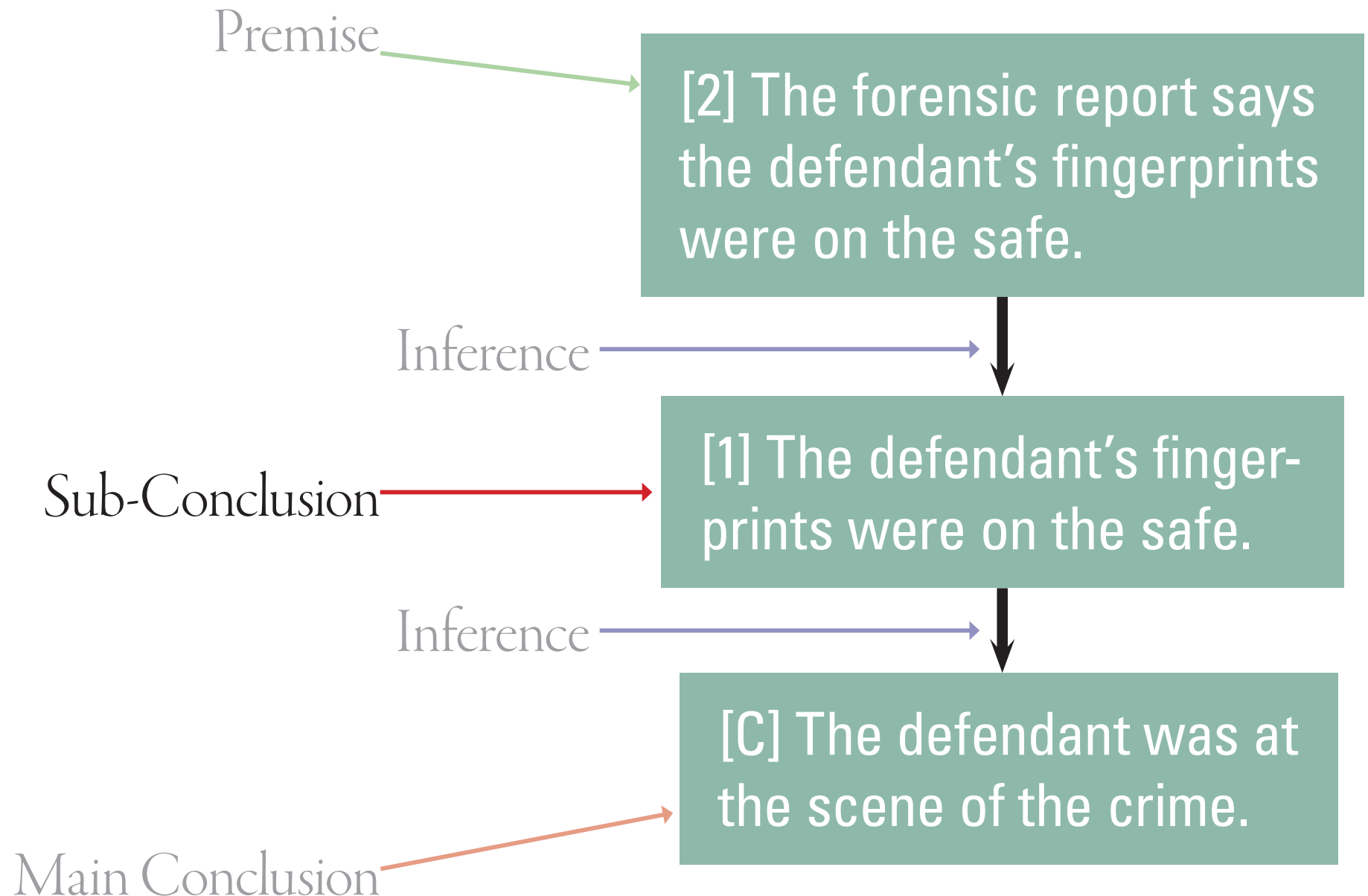
[1] The defendant's fingerprints were on the safe.



[C] The defendant was at the scene of the crime.

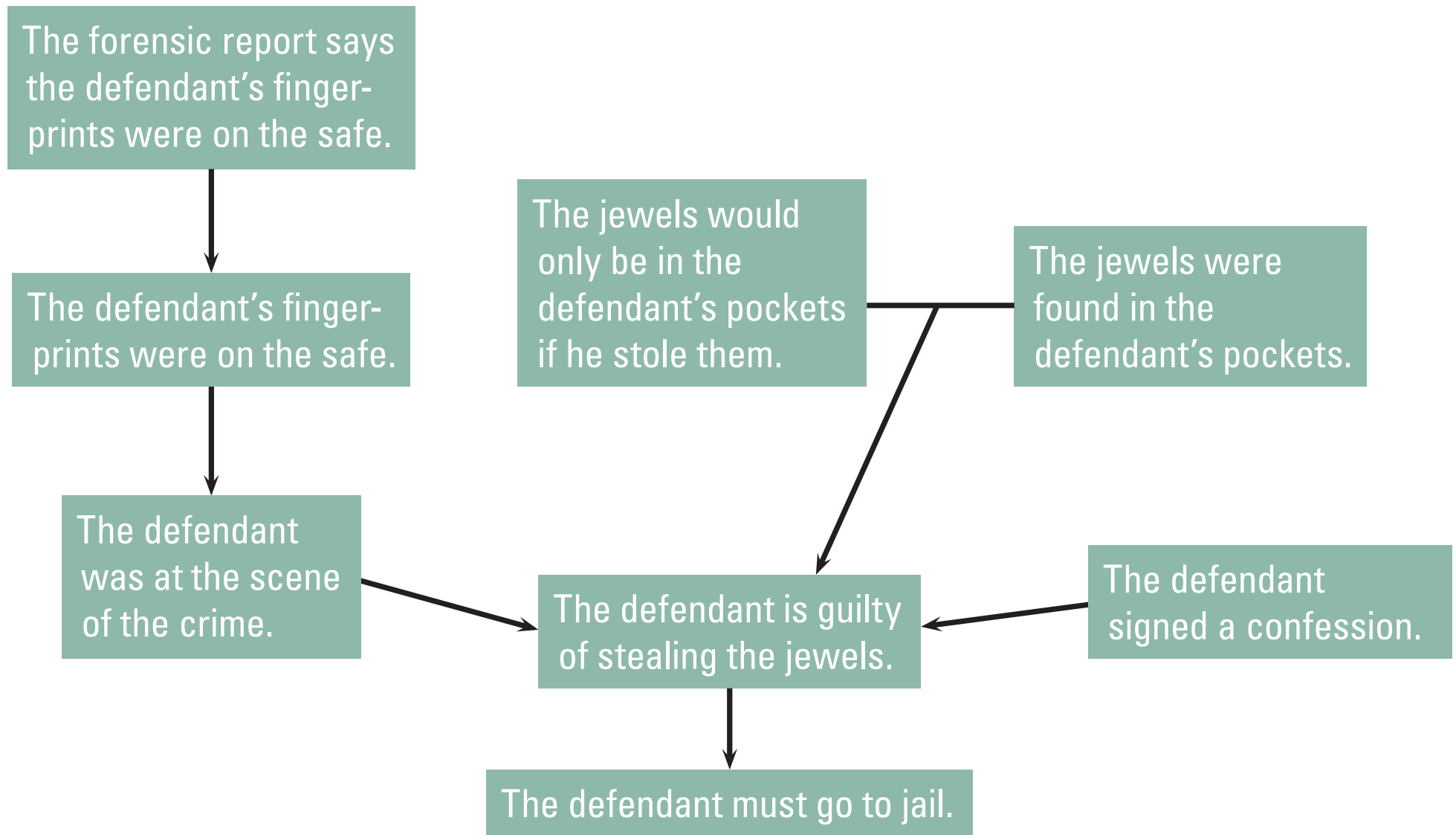
# Chain Arguments

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# The Full Argument Diagram

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# Analytic Summary

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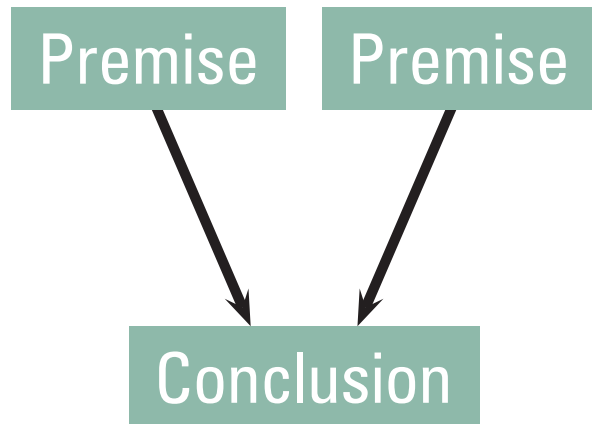
The defendant must go to jail because he is guilty of stealing the jewels. There are three sets of reasons for this. First of all, the defendant signed a confession. Second, the jewels were found in the defendant's pockets and they would only be there if he stole them. Third and finally, the forensic report says the defendant's fingerprints were on the safe, and so his fingerprints must be those on the safe, thus implying that he was at the scene of the crime.

# Different Inference Patterns

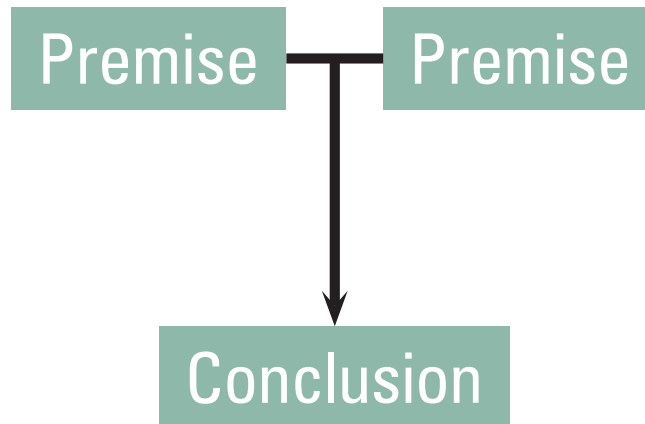
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Learn to recognize the difference between these three patterns:

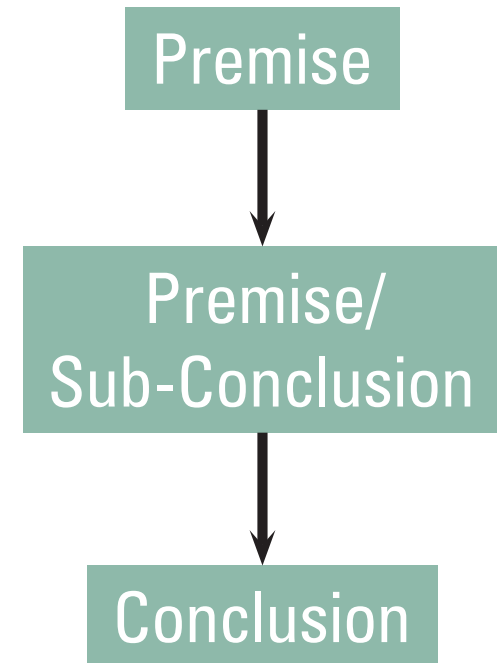
Independent  
Premises



Dependent  
Premises



Argument  
Chain



# Next Class...

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We will practice more argument diagramming.

Also, please do not forget to turn in your response to the Lecture #5 Questionnaire on your way out.