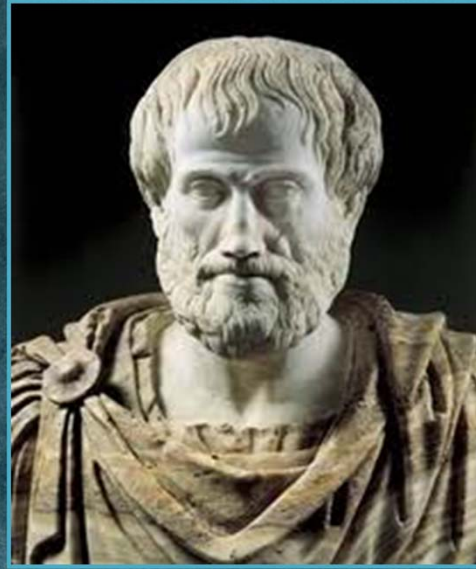
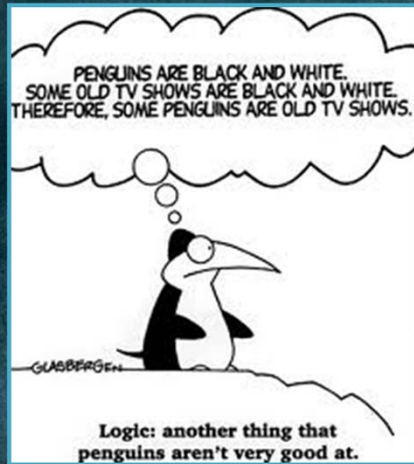


The Syllogism



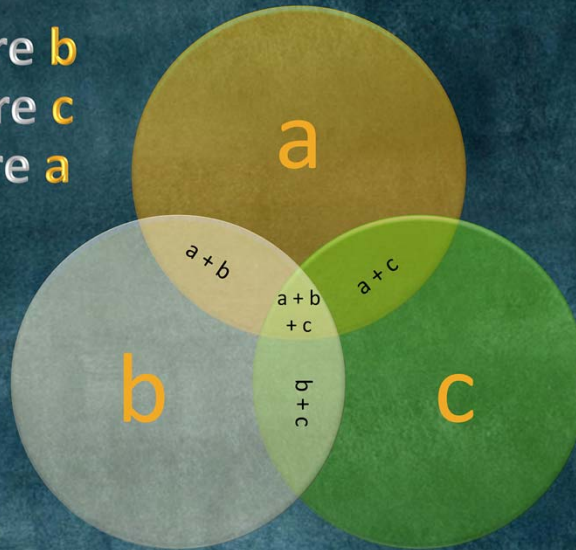
## In this lecture...



- Syllogism Form
- Valid
- Invalid
- How it can be used
- Resources

## Syllogism Form

If all a are b  
And all b are c  
Then all c are a



The syllogism is a long recognized and very basic form or structure of argument. This three-part argument form was first described by Aristotle, though he was articulating what people had been doing for a very long time.

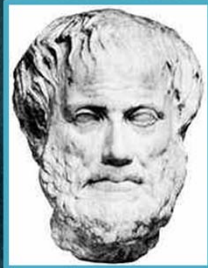
A syllogism always contains a **major premise**, a **minor premise**, and a **conclusion**.

A premise is a **claim**; it's a statement that **asserts** something is true, accurate, or believable. In a syllogism the major premise is a **universal**. You might think of this as an "all" or "none" statement. It encompasses the whole of the group; "All **A** are Y" or "No **A** are Y."

The minor premise is also a claim, but it applies the major premise to a specific individual or group of things. "**B** is X" or "**B** is not X".

By examining the relationship of the major and minor premises, one can reach a conclusion, a "therefore" or "then" – which, by the way, is **also** a claim!

# Validity



All men are mortal.  
Socrates was a man.  
Socrates was mortal.

Major Premise

Minor Premise

therefore

Conclusion

All cats hate dogs.  
Cleo likes Sam the bulldog.  
Cleo is not a cat.



It's important to note that if the premises in a syllogism are VALID, it is impossible for the conclusion to be INVALID.

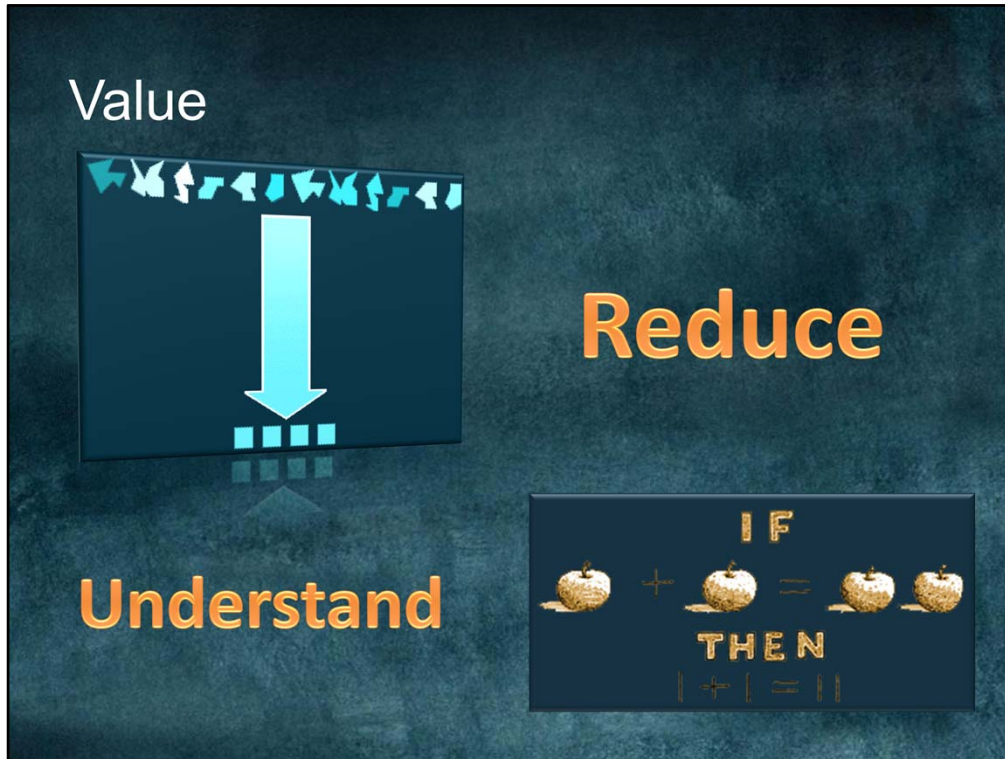
Classic example:

All men are mortal  
Socrates was a man.  
Therefore, Socrates was mortal.

However, it is possible for both premises and conclusions in a syllogism to be faulty.

Example:

All cats hate dogs.  
Cleo like Sam the bulldog.  
Therefore, Cleo is not a cat.



Using syllogisms to reduce the complexity of an argument makes it easier to understand. And that makes it possible to either support or refute the argument more effectively.

Of course, complex arguments are rarely reducible to perfect syllogisms or even a series of them. This is because complex arguments don't always contain the absolutes that make a syllogism most effective. However, the process of simplifying an argument can reveal flaws in it. This is especially true when assumptions are being made that are irrelevant or inappropriate to the claim.

For instance, in the example on the slide, apples and the numeral 1 are assumed to be equivalent rather than representational. Thus, having one apple and setting another apple beside it means there are two apples side by side. However, having a numeral 1 and setting another numeral 1 beside it doesn't automatically give the answer of 2. Instead, it can be interpreted as 11, which is a faulty conclusion. Many arguments are like that. They sound plausible, but closer inspection reveals the flaws in reasoning.

# Resources

- Syllogisms
  - <http://changingminds.org/disciplines/argument/syllogisms/syllogisms.htm>
- Syllogism
  - <http://en.wikipedia.org/wiki/Syllogism>