



# Essentials of Formal Logic

with Joelle Hodge

## Lesson 21: Chapter 6.1-6.3

### Outline:

#### Chapter 6, Lessons 6.1-6.3

- Relationships of Equivalence
- Introduction to the relationships of equivalence
- Points to Remember (6.2)
  - The relationships of equivalence help us understand which propositions are identical to each other.
  - The relationships of equivalence can help in simplifying confusing arguments or in looking at an argument from a different angle.
- Points to Remember (6.3)
  - Every categorical proposition has an obverse relationship ( $A, E, I, O$ ).
  - Obversion requires changing the quality of both the subject and predicate of the proposition. This is accomplished by:
    - Changing the quality of the subject term from affirmative to negative or from negative to affirmative.
    - Changing the quality of the predicate term to its complement.
  - If a term has two “nons” in it, the “nons” cancel each other out.
  - Use caution in using opposite terms as complements.
- “Not all dogs are brown,” is equivalent to, “Some dogs are not brown.”
- Nate: So how do these relationships of equivalence work?
- Socrates: Well, it may help you to understand that better if I tell you that there are three main relationships of equivalence. They are **conversion**, **contraposition**, and **obversion**. Each of these propositions has specific rules that allow you to use it as a type of tool for changing propositions into equivalent propositions.
- It’s that concept of converting a proposition from one form into another that will be the key to understanding relationships of equivalence, which are also known as **immediate inferences**.
- Example: No pro-environmental activists are non-friends of humanity.
- Lesson 6.3, The Obverse Relationship
  - Every categorical proposition has an obverse relationship ( $A, E, I, O$ ).
  - Obversion requires changing the quality of both the subject and predicate of the proposition. This is accomplished by:
    - Changing the quality of the subject term from affirmative to negative or from negative to affirmative.
    - Changing the quality of the predicate term to its complement.
  - If a term has two “nons” in it, the “nons” cancel each other out.



- **Use caution in using opposite terms as complements.**
- All men are mortals. A, Universal Affirmative
- No men are non-mortals.
- Some birds are flightless creatures.
- Some birds are not non-flightless creatures.