

Discrete Mathematics --- Day 4 --- September 1, 2004

Jason Hoover

Assigned days for note taking

Jason H.	Day 4
Doug	Day 5
Jon	Day 6
Anthony	Day 7
Jason A.	Day 8
Jebrandon	Day 9
D.J.	Day 10
David	Day 11
Karlo	Day 12
Robbie	Day 13
Karen	Day 14
Kevin	Day 15
Sedrick	Day 16
Dennis	Day 17
Ralph	Day 18
Tim	Day 19
Travis	Day 20
Brandon	Day 21
Ziggy	Day 22
Evan	Day 23
Joe	Day 24
Ryan	Day 25
Talaya	Day 26
Justin	Day 27
John	Day 28
Darren	Day 29
Ernie	Day 30
Will	Day 31
Josh	Day 32
Fecil	Day 33

Syllogisms

A syllogism is an abstract logical argument.

Examples:

- 1.) Modus Ponens If an implication is true and its premise is true, then its conclusion must be true. If P implies Q is true, and P is true, then Q is true.
- 2.) Disjunctive Syllogism If the disjunction of two statements is true and the first statement is false, then the second statement is true. If the disjunction of P and Q is true, and P is false, then Q is true.
- 3.) Modus Tollens If an implication is true and its conclusion is false, then its premise must be false. If P implies Q , and Q is false, then P is false.
- 4.) Hypothetical Syllogism If two implications are true, and the conclusion of the first is the premise of the second, then the premise of the first implies the conclusion of the second. If P implies Q is true, and Q implies R is true, then P implies R is true.
- 5.) Simplification If the conjunction of two statements is true, then each of the statements is true. If the conjunction of P and Q are true, then P and Q are true.
- 6.) Resolution If the disjunction of true P and true Q is true, and the disjunction of false P and true R is true, then the disjunction of true Q and true R is true.

The portion of class notes entitled “Syllogisms” is from the class handout of the same name. That handout is from “Discrete Teaching” by Hochberg and DeBellis. There are class notes added to each example. I thought I would give a source, because plagiarizing the teacher might not be a good idea.