# **CLASS: Implication, Converse, Inverse and more**

**Due** Jan 23 at 11:59pm **Points** 9 **Questions** 6 **Time Limit** None **Allowed Attempts** Unlimited

# Instructions

Have your Math 22 notebook prepared to write the definition and the examples.

This CLASS assignment is an introduction to Logical Statements and Equivalence.

You have multiple attempts in answering the questions.

My old lecture:



Take the Quiz Again

# **Attempt History**

	Attempt	Time	Score
KEPT	Attempt 1	49 minutes	8.5 out of 9

	Attempt	Time	Score	
LATEST	Attempt 2	1 minute	8 out of 9	
	Attempt 1	49 minutes	8.5 out of 9	

### (!) Correct answers are hidden.

Score for this attempt: **8** out of 9 Submitted Jan 23 at 3pm This attempt took 1 minute.

## Question 1

4 / 4 pts

<u>Implication Proposition</u> ⇒ (https://www.youtube.com/watch? v=U8mle1ApP84)

### Converse and Inverse.pdf

(https://deanza.instructure.com/courses/33250/files/10755084?wrap=1) ↓ (https://deanza.instructure.com/courses/33250/files/10755084/download? download\_frd=1)

$${\sim}(p\to q)\equiv p {\textstyle \,\square\,} {\sim} q$$

$$\sim (p \to q) \equiv \sim (\sim p \Box q)$$
  
 $\equiv \sim (\sim p) \Box (\sim q)$  by De Morgan's laws  
 $\equiv p \Box \sim q$  by the double negative law.

The connector in the red box is and (and, or, implication, biconditional)

The connector in the blue box is or (and, or, implication, biconditional)

The connector in the green box	is and	(and, or,
implication, biconditional)		
The connector in the pink box is	and	(and, or,
implication, biconditional)		
Answer 1:		
and		
Answer 2:		
or		
Answer 3:		
and		
Answer 4:		
and		

Question 2 1 / 1 pts

Implication, converse, inverse, contrapositive 

(https://www.youtube.com/watch?
v=Lwo8MrnPD8Q&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=92

### **Converse and Inverse.pdf**

A conditional statement is logically equivalent to its -----.

contrapositive

Incorrect

#### 0 / 1 pts **Question 3**

(https://www.youtube.com/watch?

v=Lwo8MrnPD8Q&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&index=92

#### Converse and Inverse.pdf

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Suppose a conditional statement of the form "If p then q" is given.

- is "If q then p." 1. The
- 2. The is "If  $\sim p$  then  $\sim q$ ."

The first blank is inverse

The second blank is contrapositive



### **Answer 1:**

inverse

#### Answer 2:

contrapositive

Question 4	1 / 1 pts
Order of Operations (https://www.youtube.com/watch?v=fwvA1XU&list=PLiwEbczHeZcuf7VyebtyKcVDqfViUkqfh&indexConverse and Inverse.pdf (https://deanza.instructure.com/courses/33250/files/10755084/download_frd=1)	<u>(=93)</u> 2 <u>wrap=1)</u> ↓
and/or takes priority over negation.	
True	
False	

Question 5	1 / 1 pts
Example of Truth Table for Compound Statement with 8 F  (https://www.youtube.com/watch? v=bQQ6QeM3H5M&list=PLiwEbczHeZct- 3ZVJleXCls1higNLB0y8&index=54)  Is this a contradiction? (yes or no)	Rows ⊟
no	

Truth Table for p and not (q or r) with 8 Rows
(https://www.youtube.com/watch?v=x8jHiPwcSek&list=PLiwEbczHeZct-
27\/ IIoVClo4biaNI D0v09indov=EE\
3ZVJleXCls1higNLB0y8&index=55)

**Question 6** 

1 / 1 pts

Can you confirrexample? (yes	m that you can construct a truth table similar to the or no)	
yes		

Quiz Score: 8 out of 9