

Discrete Math
Quiz 7

Name: _____

You have 10 minutes to complete this quiz. You may not use any unauthorized sources and you may not communicate with others about the exam. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. Consider the following implication:

If the suspect is telling the truth, then the suspect is innocent. ($H \rightarrow C$)

Write down the converse, contrapositive, and inverse statements. After each statement you write, indicate whether the statement you wrote is logically equivalent or logically inequivalent to the original statement above.

(a) (Converse) ($C \rightarrow H$)

If the suspect is innocent, then the suspect is telling the truth.

(Circle one) Logically equivalent

Logically inequivalent

(b) (Contrapositive) ($(\neg C) \rightarrow (\neg H)$)

If the suspect is not innocent, then the suspect is not telling the truth.

(Circle one) Logically equivalent

Logically inequivalent

(c) (Inverse) ($(\neg H) \rightarrow (\neg C)$)

If the suspect is not telling the truth, then the suspect is not innocent.

(Circle one) Logically equivalent

Logically inequivalent