

# Quick Check: Equivalence Proof

**\*\*YOUR NAME HERE\*\* \***

Monday 10<sup>th</sup> April, 2023

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## Question 0: Propositional Equivalence Proof

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Use a chain of equivalences to show that the following proposition is a tautology (i.e. always true).

$$((p \wedge q) \vee (p \rightarrow (\neg p \wedge r))) \vee p$$

$$((p \wedge q) \vee (\neg p \vee (\neg p \wedge r))) \vee P \quad (1)$$

$$((p \wedge q) \vee ((\neg p \wedge r) \vee \neg p)) \vee P \quad (2)$$

$$(p \wedge q) \vee (((\neg p \wedge r) \vee \neg p) \vee p) \quad (3)$$

$$(p \wedge q) \vee ((\neg p \wedge r) \vee (\neg p \vee p)) \quad (4)$$

$$(p \wedge q) \vee ((\neg p \wedge r) \vee T) \quad (5)$$

$$(p \wedge q) \vee T \quad (6)$$

$$T \quad (7)$$

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\*Collaborators: List collaborators here or delete if none

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**Question 1: Video Solution**

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(a) What is one thing you took away from the video solution?

The video solution showed that I need to show all the steps of the solution (as well as the rule that was used) rather than just skipping steps because something seems obvious to me when i am soliving the problem

(b) What topic from the quick check, lecture, or 311 homework would you most like to review in workshop?

I would like some more practice with the rules that were introduced in class this week since they can be applied in many different ways to finish problems.