CSE 390Z: Mathematics for Computation Workshop

QuickCheck: Equivalences

Please submit a response to the following questions on Gradescope. We do not grade on accuracy, so please submit your best attempt. You may either typeset your responses or hand-write them. Note that hand-written solutions must be legible to be graded.

We have created **this template** if you choose to typeset with Latex. **This guide** has specific information about scanning and uploading pdf files to Gradescope.

0. Equivalences

Consider the proposition $(p \rightarrow q) \vee \neg(q \wedge \neg p)$.

(a) Use a truth table to show that the proposition is a tautology (i.e., that it is always true).

(b) Use a chain of equivalences to show that the proposition is a tautology.

> **Update 1/7/23:** 311 lecture won't fully cover this until Monday, 1/9. Feel free to wait until after class to attempt this problem, or make an attempt by following along the solution video below.

1. Video Solution

Watch **this video** on the solution **after** making an initial attempt. Then, answer the following questions.

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

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