CSE 390Z: Mathematics for Computation Workshop

QuickCheck: Set Theory Proof (due Sunday, November 6)

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. Set Proof: A Complement Makes all the Difference

Prove that for any sets A, B:
$$A \cap \overline{(A \setminus B)} = A \cap B$$

Note: You may use either a subset proof in each direction, or a chain of equivalences proof. The solution video uses two subset proofs.

1. Video Solution

Watch **this solution video** from our past instructor Omar **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?