8/26/2025 Fall 2026, Discrete Structures I Quiz 1 Sitaraman

Howard University Math Department

Instructions:

PLEASE PROVIDE STEP BY STEP EXPLANATIONS

WRITING ONLY ANSWERS WILL NOT GET FULL CREDIT

Time Limit 30 minutes

Please read the questions carefully before answering

1. (10 points) Check whether the statement " $\overline{A \cap B} = \overline{A} \cup \overline{B}$ for all sets $A, B,$ " is true or false for the specific sets $A = \{1, 2, 3\}, B = \{2, 4, 5\}, U = \{1, 2, 3, 4, 5, 6\}$.

2. (10 points) Write the following using set builder notation:
 1. Set of all odd numbers.
 2. Set of all irrational numbers.

3. (10 points) Write the negative of the following:
 1. e^x is continuous and differentiable.
 2. An increasing function could be continuous or discontinuous.