

Test 1

1.
 - Is set difference commutative? That is, must we have $A \setminus B = B \setminus A$? (If true, prove it; if false, give a counterexample.)
 - Is set difference associative? That is, must we have $(A \setminus B) \setminus C = A \setminus (B \setminus C)$? (If true, prove it; if false, give a counterexample.)
 - Prove that for any sets A, B, C , we have

$$A \setminus (B \cup C) = (A \setminus B) \cap (A \setminus C) = (A \setminus B) \setminus C$$

- What is $A \setminus \emptyset$? What is $\emptyset \setminus A$?