



## Discrete Structures

CS 241 - 001

Department of Physical and Computer Sciences

Medgar Evers College

### Workshop Lab 4: Sets Proofs

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

**Directions:** Write or type solutions on a separate paper(s) and attach this paper to the front of your work. Prove each of the following statements by either using set identities or a direct proof.

1.  $A \subseteq (A \cup B)$

2.  $(A \cap B) \subseteq A$

3.  $(A - B) \cap (B - A) = \emptyset$

4.  $(A \cup C) \cap [(A \cap B) \cup (\overline{C} \cap B)] = A \cap B$

5.  $A \times (B \cap C) = (A \cap B) \times (A \cap C)$

**Extra Credit**  $\wp(A) \cap \wp(B) = \wp(A \cap B)$