Math 2013 - Introduction to Discrete Mathematics

Quiz #3 - 2005.09.07

Solutions

Define $U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$ to be the universal set on which the following sets are based.

$$A = \{0, 2, 4, 6, 8\}, \quad B = \{1, 3, 5, 7, 9\}, \quad C = \{0, 1, 2, 3, 4\}, \quad D = \{5, 6, 7, 8\}$$

1. Compute $A \cap D$

$$A \cap D = \{6, 8\}$$

2. Compute $B - C$

$$B - C = \{5, 7, 9\}$$

3. Compute $D \oplus B$

$$D \oplus B = D \cup B - D \cap B = \{1, 3, 5, 6, 7, 8, 9\} - \{5, 7\} = \{1, 3, 6, 8, 9\}$$

4. Compute C'

$$C' = \{5, 6, 7, 8, 9\}$$

5. Compute $C \cup D$

$$C \cup D = \{0, 1, 2, 3, 4, 5, 6, 7, 8\}$$