UMUC

CMSC150 Set Operations Drill, 3.1

R. T. Harris

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Instructions: This is not a self-grading quiz nor are the answers included. This is simply a drill to practice your skills reading the set operation notation. So, take a separate sheet of paper and write out your answers. If you need answers, I can post them in a day or so.

1. Assume $A = \{1, 3, 5\}, B = \{2, 3\}$

   Check ALL elements of the following sets:

   (a) $A \cap B$

   - A. 1
   - B. 5
   - C. 2
   - D. 3
   - E. 4

   (b) $A \cup B$

   - A. 1
   - B. 3
   - C. 4
   - D. 5
   - E. 2

   (c) $A - B$

   - A. 1
   - B. 2

- C. 4
- D. 3
- E. 5

(d) The Symmetric difference of A and B, denoted by $A \oplus B$, is the set containing those elements in either A or B, but NOT in both.

Check All elements below that are in $A \oplus B$.

- A. 5
- B. 4
- C. 2
- D. 1
- E. 3

2. Suppose that

$A = \{2, 4, 6\}, B = \{2, 6\}, C = \{4, 6\}$ and $D = \{4, 6, 8\}$. Determine which of these sets are subsets of which other of these sets.

Check ALL correct answers below.

- A. $B \subseteq D$
- B. $B \subseteq A$
- C. $B \subseteq C$
- D. $D \subseteq A$
- E. $D \subseteq C$
- F. $A \subseteq D$
- G. $A \subseteq C$
- H. $C \subseteq A$
- I. $A \subseteq B$
- J. $D \subseteq B$
- K. $C \subseteq D$

3. Supoose that: $A = \{1, 3, 5\}, B = \{2, 3\}$

   Check ALL of the following Cartesian products to which the following elements belong:

   (a) $(1, 2)$

   - A. $A \times A$
   - B. $B \times B$
   - C. $B \times A$

- D. $A \times B$

(b) $(3, 1)$

- A. $B \times A$
- B. $B \times B$
- C. $A \times A$
- D. $A \times B$

(c) $(1, 1)$

- A. $A \times B$
- B. $B \times B$
- C. $A \times A$
- D. $B \times A$

(d) $(3, 3)$

- A. $B \times B$
- B. $B \times A$
- C. $A \times B$
- D. $A \times A$