

Section 1.3: cont'd

Friday, October 02, 2015
10:33 AM

example: consider the sets $A = \{1, 3, 5\}$, $B = \{2, 4, 6\}$
and $U = \{1, 2, 3, 4, 5, 6, 7\}$

$$\text{find } \bar{A} = \{2, 4, 6, 7\}$$

$$\overline{\bar{A}} = \{1, 3, 5\} = A$$

$$\overline{\overline{A}} = A$$

$$\overline{\overline{\overline{A}}} = A$$

$$A \cap B = \emptyset = \{\}$$

$$A \cup \bar{A} = \{1, 3, 5\} \cup \{2, 4, 6, 7\} = U$$

$$B \cap \bar{B} = \emptyset$$

$$A \cup U = U$$

$$A \cap U = \{1, 3, 5\} \cap \{1, 2, 3, 4, 5, 6, 7\} = A$$

$$B \cup \emptyset = \{2, 4, 6\} \cup \{\} = \{2, 4, 6\}$$

$$B \cap \emptyset = \{2, 4, 6\} \cap \{\} = \emptyset$$

$$A \cup A = A$$

$$B \cap B = B$$

note: is it always true that for all sets A , $A \subseteq U$? **yes**
 $A \subset U$? **no**
 A could equal U