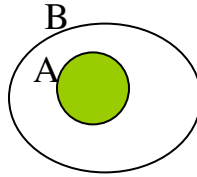
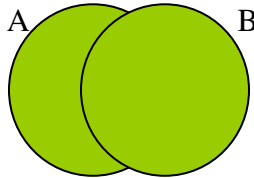


## Summary of section 2.1 on Sets

**Subset**  $A \subseteq B$   
 “Set A is contained in set B”

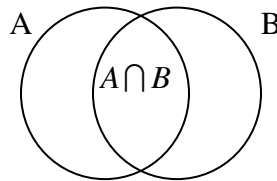


**Union of sets,  $A \cup B$**   
 “combination of A and B”



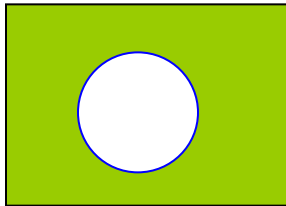
$$A \cup B = \{x \mid x \in A \text{ or } x \in B\}$$

**Intersection of sets,  $A \cap B$**   
 “overlap of A and B”



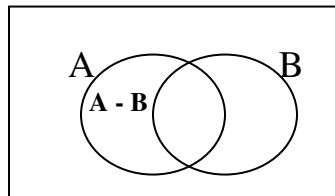
$$A \cap B = \{x \mid x \in A \text{ and } x \in B\}$$

**Complement of a set,  $\bar{A}$**   
 “elements in U but not in set A”



$$\bar{A} = \{x \mid x \in U \text{ and } x \notin A\}$$

**Set Difference,  $A - B$**   
 “elements in A but not in B”



$$A - B = \{x \mid x \in A \text{ and } x \notin B\}$$

**Cartesian Product or Cross Product,  $A \times B$**   
 “ordered pairs of elements from sets A and B”

$$A \times B = \{(a,b) \mid a \in A \text{ and } b \in B\}$$

If  $A = \{r, w, b\}$  and  $B = \{j, k\}$ , then  
 $A \times B = \{(r,j), (w,j), (b,j), (r,k), (w,k), (b,k)\}$