❖ Symmetric Difference :

➔ A symmetric difference of the sets contains all the elements in either set but **NOT** both.

➔ Symmetric diff. symbol is a ⊕**.**

➔ Example: **C = M ⊕ P.**

➔ Formal definition for the symmetric difference of two sets:

A ⊕ B = { *x* | (*x*∈ A or *x*∈ B) and x ∉ A ∩ B}

A ⊕ B = (A U B) – (A ∩ B) ← **Important!**

➔ **Further Examples**

- For an example of the symmetric difference, we will consider the sets ***A* = {1, 2, 3, 4, 5}** and ***B* = {2, 4, 6}.** The symmetric difference between these sets is **{1, 3, 5, 6}**.
- {1, 2, 3} ⊕ {3, 4, 5} = {1, 2, 4, 5}
- {New York, Washington} ⊕ {3, 4} = {New York, Washington, 3, 4}
- {1, 2} ⊕ ∅ = {1, 2}
  The symmetric difference of any set S with the empty set will be the set S