Set (collection of Unordered Unique elements) $\{1, 2, 3, 4, 5\}$

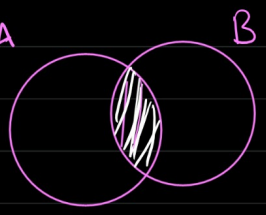
$\{3, 5, 7, 9\}$

→ Common element
→ population.

* Properties of set

$A = 1, 2, 3, 4, 5$

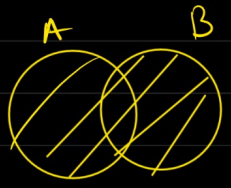
$B = 3, 5, 7, 9$



① **intersection** (common elements)

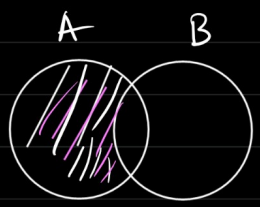
$A \cap B = \{3, 5\}$

② **Union** (all distinct elements from both the sample)



$A \cup B = \{1, 2, 3, 4, 5, 7, 9\}$

③ **Difference** (items which are present only in first data/set)

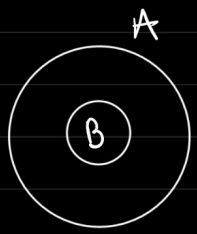


$A - B = \{1, 2, 4\}$

④ **Subset** (all the element of B is present in A then we say B is subset of A.

$A = \{1, 2, 4, 5, 7\}$

$B = \{2, 4, 5\}$



$B \rightarrow A$ — True
(B is subset of A)

✗ $A - B$ —— false

⑤ Superset (A is containing all element of B, A is superset of B)

$A \longrightarrow B \Rightarrow$ True

$B \not\longrightarrow A$ = False.

$A = \{1, 2, 4, 5, 7\}$

$B = \{2, 4, 5\}$

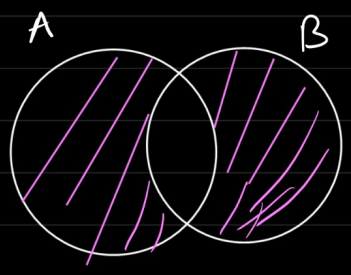
⑥ Symmetric difference (opposite of intersection)

* The elements that are distinct in both set excluding intersection.

$A = \{1, 2, 4, 5, 7\}$, $B = \{\}$

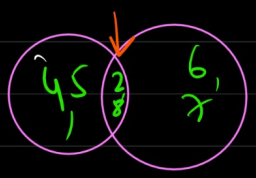
$A \Delta B = \{2, 4, 5\}$

$A \Delta B = \{1, 7\}$



$A = \{4, 5, 2, 8\}$

$B = \{2, 8, 6, 7\}$



$A \Delta B = \{4, 5, 6, 7\}$