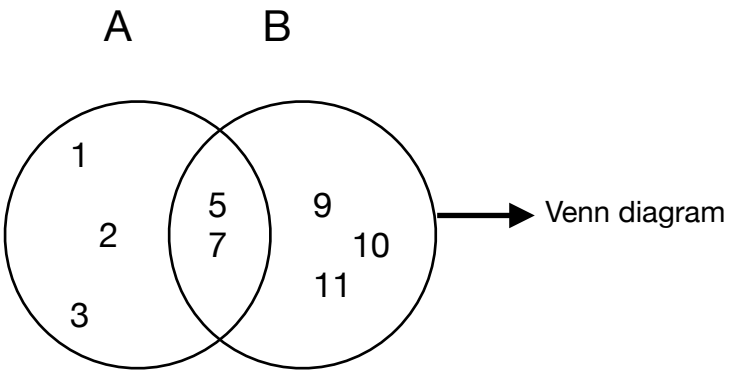
Set Operations in maths

- We can perform some binary operation on set
- Some of the operations are **union , intersection , difference and symmetric difference.**
- In mathematics we can perform these set operations like

- Consider 2 sets

$$A = \{ 1,2,3,5,7 \} \quad B = \{ 5,7,9,10,11 \}$$

Union :



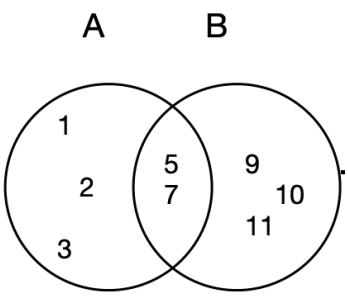
$A \cup B = \{ 1,2,3,5,7,9,10,11 \}$

$\cup$ - Union symbol

- Union combines the element of set A and set B together without any duplication .
- Also , $A \cup B = B \cup A$

Intersection :

- Intersection means you have to take the common elements of set A and set B.



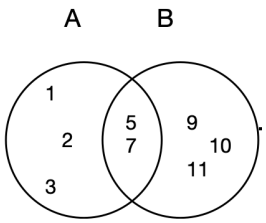
A **n** B = { 5,7 }

n - Intersection

- Also , A **n** B = B **n** A

Difference :

- Difference means , Suppose you are taking A - B then take all elements of ' A ' which are not present in ' B ' and vice versa.



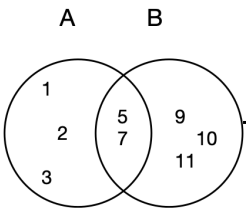
A - B = { 1,2,3 }

B - A = { 9,10,11}

- Here , A - B Not Equal to B - A

Symmetric Difference :

- Symmetric different take the element present exclusively in sets A and set B and it doesn't take the common element.



A **^** B = { 1,2,3,9,10,11 }

^ - symmetric difference

Here, A ^ B = B ^ A