

Class 7th

Date: 15th April 2021

Day: Wednesday

Mathematics

Ms. Shehla Bano

8. If $A = \{0, 2, 4, 6, 8\}$, $B = \{1, 3, 5, 7, 9\}$, find:

(i) $A \cup B$

(ii) $A \cap B$

(iii) $A \setminus B$

(iv) $B \setminus A$

9. If $A = \{a, b, c, d, e\}$, $B = \{b, e, g, i, k\}$, find:

(i) $A \setminus B$

(ii) $B \setminus A$

10. Find the universal set if $A = \{1, 3, 5, 7, 9\}$ and $A' = \{4, 5, 6, 7, 12\}$.

11. If $A = \{1, 3, 5, 7, 9\}$, $B = \{2, 4, 6, 8, 10\}$, and $C = \{3, 6, 12, 18, 21\}$, then prove the commutative property of intersection of sets.

12. If $A = \{3, 6, 9, 12, 15\}$, $B = \{4, 8, 12, 16, 20\}$, and $C = \{5, 10, 15, 20\}$, then prove the associative property of union of sets.

Q#10

$$A = \{1, 3, 5, 7, 9\} \quad A' = \{4, 5, 6, 7, 12\}$$

$$A' = U - A$$

$$A' + A = U$$

$$U = A' + A$$

$$A' + A = \{4, 5, 6, 7, 12\} + \{1, 3, 5, 7, 9\}$$

$$U = \{1, 3, 4, 5, 6, 7, 9, 12\} \text{ Ans}$$

Q#12

Associative Property of Union

$$A = \{3, 6, 9, 12, 15\}$$

$$B = \{4, 8, 12, 16, 20\}$$

$$C = \{5, 10, 15, 20\}$$

$$\text{i) } A \cup B = B \cup A$$

$$\text{ii) } A \cup C = C \cup A$$

$$\text{iii) } B \cup C = C \cup B$$

Solution:

i) $A \cup B = B \cup A$

LHS

$A \cup B$

$$A \cup B = \{3, 6, 9, 12, 15\} \cup \{4, 8, 12, 16, 20\}$$

$$A \cup B = \{3, 4, 6, 8, 12, 15, 16, 20\} \text{-----(i)}$$

RHS

$B \cup A$

$$B \cup A = \{4, 8, 12, 16, 20\} \cup \{3, 6, 9, 12, 15\}$$

$$B \cup A = \{3, 4, 6, 8, 12, 15, 16, 20\} \text{-----(ii)}$$

From (i) and (ii) we have proved that

$LHS = RHS$

