Ques - Give another description of the set $\{x : x$ is an integer and $5 \leq x \leq 12\}$ and indicate which is finite or infinite set.

Solu - $\{5, 6, 7, 8, 9, 10, 11, 12\}$, Finite set.

Ques - Give another description of the set $\{2, 4, 8, \ldots\}$ and indicate which is finite or infinite set.

Solu - ~~$\{x : x$ is even natural number$\}$~~

$\{x : x \in 2^n \text{ & } n \in N\}$, infinite set.

Ques - Given $S = \{2, a, \{3\}, 4\}$ and $R = \{\{a\}, 3, 4, 1\}$ indicate whether the following are true or false.

$\{a\} \in S$ - False

$\{a\} \in R$ - True

$\{a, 4, \{3\}\} \subseteq S$ - True

$\{\{a\}, 1, 3, 4\} \subseteq R$ - True

$\{\{a\}, 1, 3, 4\} \subset R$ -

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Ques - Give the power sets of the following sets -

$\{a, \{b\}\}$ - $\{\phi, \{a\}, \{\{b\}\}, \{a, \{b\}\}\}$

$\{1, \phi\}$ - $\{\phi, \{1\}, \{\phi\}, \{1, \phi\}\}$

$\{x, y, z\}$ - $\{\phi, \{x\}, \{y\}, \{z\}, \{x, y\}, \{y, z\}, \{z, x\}, \{x, y, z\}\}$

Ques - If $A_1 = \{\{1, 2\}, \{3\}\}$, $A_2 = \{\{1\}, \{2, 3\}\}$ and $A_3 = \{\{1, 2, 3\}\}$ then show that A_1, A_2 and A_3 are mutually disjoint.

Solu - $A_1 \cap A_2 = \phi$

$A_2 \cap A_3 = \phi$, $A_1 \cap A_3 = \phi$, Hence the given sets are disjoints

Ques - If $S = \{a, b, p, q\}$ and $Q = \{a, p, t\}$ find $S \cap Q$ & $S \cup Q$.

Solu - $S \cap Q = \{a, p\}$

$S \cup Q = \{a, b, p, q, t\}$

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Ques - If $A_1 = \{1,2\}$ and $A_2 = \{2,3\}$, $A_3 = \{1,2,3,6\}$ find, $\bigcup_{i=1}^{3} A_i$ and $\bigcap_{i=1}^{3} A_i$.

Solu - $\bigcup_{i=1}^{3} A_i = A_1 \cup A_2 \cup A_3 = \{1,2,3,6\}$

$\bigcap_{i=1}^{3} A_i = A_1 \cap A_2 \cap A_3 = \{2\}$

Ques - If $A = \{2,5,6\}$, $B = \{3,4,2\}$ & $C = \{1,3,4\}$ find $A-B$, $B-A$, $A-C$.

Solu - $A - B = \{5,6\}$

$B - A = \{3,4\}$

$A - C = \{2,5,6\}$