

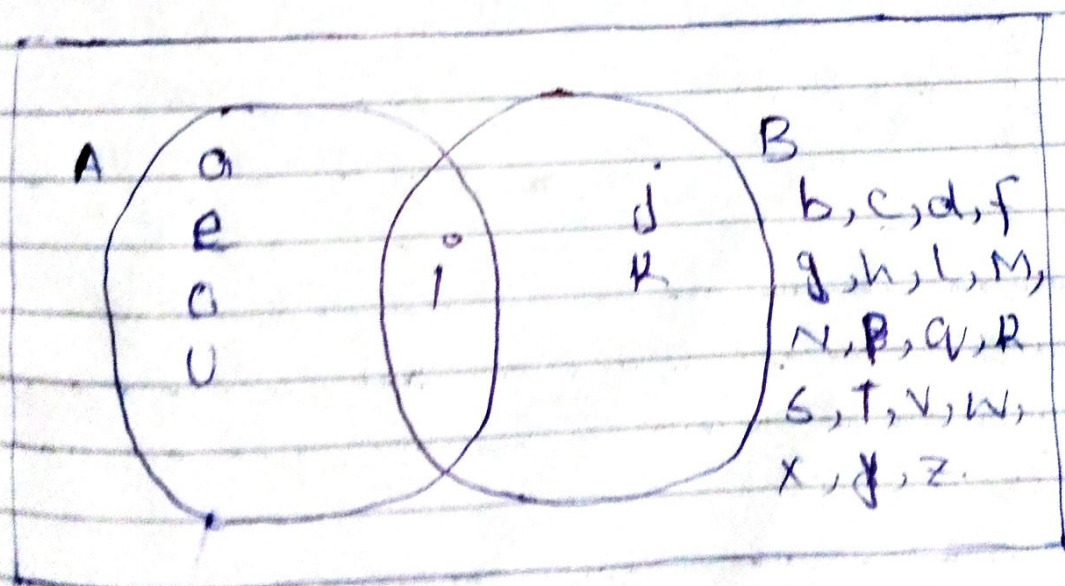
Q1:- Part A

Given a set $A = \{a, e, i, o, u\}$
 $B = \{l, d, k\}$

Universal sets $U = \{a, b, c, \dots, z\}$

Solution:- $A \cup B = \{a, e, i, g, k, o, u\}$

i, working its ones



Q No part (B)

Finite set

In mathematics, a finite set is a set that has a finite number of elements. Informally, a finite set is a set which one could in principle count and finish counting, for example,

$$\{2, 4, 6, 8, 10\}$$

is a finite set with five elements. The number of elements of a finite set is a natural number (a non-negative integer) and is called the cardinality of the set. A set that is not finite is called infinite. For example

$$\{1, 2, 3, \dots\}$$

Subset:-

A set A is subset of another set B if all elements of the set A are elements of the set B . In other words, the set A is contained inside the set B . The subset relationship is denoted as $A \subset B$.

Q No 1 part (B)

Equal Sets :-

equal sets have the exact same elements in them, even though they could be out of order.

Equivalent sets have different elements but have the cardinality is the number of elements in the set. Therefore, if two sets have the same cardinality they are equivalent.

Q NO 2) part (B)

$$15(x-1) + 4(x+3) = 2(7+x)$$

$$\Rightarrow 15x - 15 + 4x + 12 = 2x + 14 + 2x$$

$$\Rightarrow 19x - 2x = 14 - 12 + 15$$

$$\Rightarrow 17x = 17$$

$$\Rightarrow x = 1$$

$$8(x-1) + 17(x-3) = 4(4x-9) + 4$$

$$8x + 17x - 51 - 8 = 16x - 36 + 4$$

$$25x - 59 = 16x - 32$$

$$25x - 16x = 59 - 32$$

$$9x = 27$$

$$9 \text{ on B.S}$$

$$\frac{9x}{9} = \frac{27}{9} \cdot 3$$

$$\Rightarrow x = 3$$

Q3:-

$$\begin{aligned}7x + 2y &= 47 \\ 5x - 4y &= 1\end{aligned}$$

We are going to multiply Equation (1) by 2 because this will make the magnitude of the coefficients of y the same in both equations. Equation (1) becomes

$$14x + 4y = 94$$

If we now add Equation (2) and Equation (3) we will find that the terms involving y disappear

$$\begin{array}{r}5x - 4y = 1 \\ + 14x + 4y = 94 \\ \hline 19x = 95\end{array}$$

and so $x = \frac{95}{19} = 5$

Now that we have a value for x we can substitute this into Equation (2) in order to find y .
Substituting

$$\begin{aligned}5x - 4y &= 1 \\ 5 \times 5 - 4y &= 1 \\ 25 &= 4y + 1 \\ 24 &= 4y \\ y &= 6\end{aligned}$$

The solution is
 $x = 5, y = 6$