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SUBJECT: BUSSINESS MATHEMATICS

MID EXAM ASSIGNMENT

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Q: 1 (a)

Given the sets A = { A, E, I, O, U } and B = { I, J,

Draw Venn diagram of A and B using the universal Set U = { A, B, C .... Z }?

Answer:

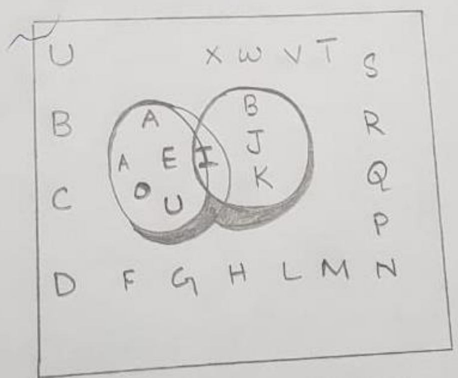
$A = \{A, E, I, O, U\}$.

$B = \{I, J, K\}$.

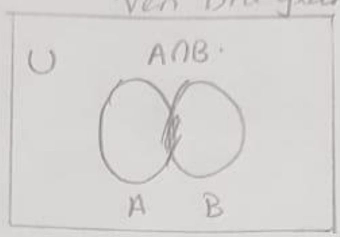
$U = \{A, B, C, \ldots\ldots Z\}$.

$A \cap B = \{A, E, I, O, U\} \cap \{I, J, K\}$

Venn Diagram: $= \{I\}$.



ven Diagram.



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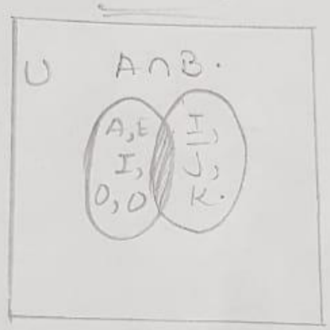

Part B:

Q(b) Define with Examples:

1: Equal Set:

Defination:

Before we get into the defination of an equivalent set, we need to first know what a set is. A set is a collection of elements that are usually related. they are indicated with brakets { }. we can have a set containing numbers, words or even pictures. Here are some examples of sets:

• {1, 2, 3, 4, 5}.

when a set continues on four infinity, the last elements in the set is followed by three dots known as an elipsis, which indicates the the number continues. An example is shown here: {1, 2, 3, 4, 5, 6....}.

Equal Sets:

1: Two sets are called equal if they have exactly the same elements.

Example:

{vowels in the English alphabet}

= {a, e, i, o, u}.

On the other hand, the sets $\{1, 3, 5\}$ and $\{1, 2, 3\}$ are not equal, because they have different elements. This is written as:

$$\{1, 3, 5\} = \{1, 2, 3\}.$$

The order in which the elements are written between the Curly brackets does not matter at all.

Example:

$$\{1, 3, 5, 7, 9\} = \{3, 9, 7, 5, 1\} =$$
$$= \{5, 9, 1, 3, 7\}.$$

If an element is listed o more then ones it is only Counted once.

For Eaample:

$$\{a, a, b\} = \{a, b\}.$$

Finite and infinite Sets:

All the sets we have seen so far have been finite sets, meanings that we can list all their elements.

Here we are two examples:

{whole numbers between 2000 and 2005} = {2001, 2002}. {2003, 2004}

{whole numbers between 2000 and 3000}

= {2001, 2002, 2003, -2999}.

A set can also be infinite. all that matters is that it is well defined. Here are two examples of infinite sets:

{even whole numbers} = {0, 2, 4, 6, 8, 10 ...}

{whole numbers greater then 2000}

= {2001, 2002, 2003, 2004 ....}.

Sub Sets:

Subsets of a Set.

1: Sets of Things are often further Subdivided For Example, owls are a particlular type a bird, so every owl is also a bird. we express this in the language of Sets by Sayings that The set of owls is a Subset of the set of the birds.

2: A set S is called a Subset of another set T if every element of S is an element of T. This is written as:

$S \subseteq T$ (Read This as "S is a subset of T

Example:-

The new Symbol $\subseteq$ means is a subse of (Thus (owl) $\subseteq$ (birds) because every ow is a bird Similarly:

if $A = \{2, 4, 6\}$ $B = \{0, 1, 2, 3, 4, 5, 6\}$
then $A \subseteq B$

$S \subseteq T$.

This means that at least ones element of S is not element of T. For example:

(Birds) $\nsubseteq$ (flying Creatures).

Q2: What are the four basic rules to solve an equations?

Answer:-

1: A Generally Rule of Solving equation:

1: Simplify each sides of the equation by removing Parenthesis and Combining like terms.

2: Use addition and Subtractions to isolate the variable term on one side of the equations.

3: Use multiplication or division to solve for the variables.

4: An equal Non-Zero quantity may divided both sides of an equation

Q(b) Find the Solution of the equations?

Answer:-

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

Sol:-

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

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

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

$= 25x-59-16x+32=0.$

$= 9x-27=0$

$= 9x = 27$

$= 9x = 27.$

$= x = \frac{\cancel{27}^{3}}{\cancel{9}}$

$= x = 3$ Answer.

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

Answer:-

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

Solution:-

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

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

$= 19x-3 = 14+2x$.

$= 19x-3-14-2x=0$.

$= 17x-17=0$.

$= 17x - 17$.

$= x = \frac{\cancel{17}}{\cancel{17}}$

$= x=1$ Answer.

Q(3) Solve the following equations Simultaneou using elemination method?

(a) $7x + 2y = 47$ ---- ①.
$5x - 4y = 1$ ---- ②

Answer:-

$7x + 2y = 47$ --- ①.
$5x - 4y = 1$ --- ②.

Solution:-

$7x + 2y = 47$ — ①
$5x - 4y = 1$ — ②.

Multiply equations "1" and "2".

$= 2(7x + 2y = 47)$.
$= 14x + 4y = 94$ — (3

How add equation 2 and 3.

$= 5x - \cancel{4y} = 1$ — ②.
$= 14x + \cancel{4y} = 94$ — ③

$= 19x = 95$

$= 19x = 95$

Divide 19 by both sides:

$= \frac{\cancel{19}x}{\cancel{19}} = \frac{95}{19}.$

$= x = 5.$

Put values of "x" in equation ②.

$= 5x - 4y = 1.$

$= 5(5) - 4y = 1.$

$= 25 - 4y = 1.$

Subtract 25 from both sides:

$= \cancel{25} - 4y - \cancel{25} = 1 - 25$

$= -4y = -24.$

Divide "−4" on both sides:

$= \frac{\cancel{-4}y}{\cancel{-4}} = \frac{-24}{-4}$

$= y = 6$

Here Solution Set $= (5, 6)$ Answer

thank you