Form 1

Chapter 11 : Introduction of Set

TAECHER'S NAME:

NAME:

CLASS:

11.1 SET

Nota

- A set is a collection of objects that have certain common characteristics.
- Each object in a set is called an element
- An empty set is a set that has no elements and is represented by a symbol or { }
- $a \in S$ means a is an element of S.
- $b \notin S$ means b is not an element of S.

A Describe the following set using listings.

Match the answers below

Set S is a factor of 12	S = {3 , 6 , 9 , 12, 15 , 18 }
Set S is a factor of 20	S = {2 , 4 , 6 , 8, 10 }
Set S is a multiple of 3 which is less than 20	S = {1 , 4 , 9 , 16, 25 , 36, 49 }
Set S is an even number in the range $1 < x \leq 10$	S = {1 ,2 , 4 , 5, 10, 20 }
The set S is a perfect square number in the range $1 \leq x < 50$	S = {1 , 2 , 3 , 4, 6 , 12 }

LIVEWORKSHEETS

B Mark / on empty set and X if not empty set.

a) A = { The Pentagon has 6 sides}	b) B = {x : x is a common factor of 10 and 20}
c) C = { A multiple of 10 is a multiple of 5}	d) D = { Even numbers can be divided exactly by zero }

C Choose the following using symbol $\in$ or $\notin$. (Choose 1 answer)

a) A = {Factors of 20} 10 $\in$ / $\notin$ A	b) B = {Quadrilterals} Cube $\in$ / $\notin$ B
c) C = {1, 2, 3,4, 5,6,7,8,9,10} 15 $\in$ / $\notin$ C	d) D = {a,b,c,d,e,f,g,h} m $\in$ / $\notin$ D

D Determine the number of elements for the set below.

a) A = {1,2,3,4,5,6,7,8,9,10} n(A) =	b) B = {1,3,5,7,9,11,13,15,17,19} n(B) =
a) C = { Consonant letters in words RAINBOW } n(C) =	b) D = {x: x is a perfect square number and x < 100 } n(D) =
c) E = { x : x is an integer, $10 \leq x \leq 20$} n(E) =	d) F = { Vowel letters in the word MERPATI } n(F) =

LIVEWORKSHEETS

E find the value of x if A = B.

a) A = {2, 4, 6,8} B = {4, 6 , 8, x} x =	b) P = {4 ,5 , 6, 7} Q = {7 , x, 5, 4} x =
c) R = {1^2,2^2,3^2,4^2,5^2} S = { 9 , 16, 4, 1, x} x =	d) D = {2,3,5,7,11,13,17,21,23,29,31} E = {3,7,13, 21, 29,5, 11, 17, 23,31,x} x =

11.2 VENN DIAGRAMS, UNIVERSALS SETS, COMPLEMENT OF A SET AND SUBSETS

Notes:

A universal set is a set that contains all the elements in a discussion and is represented by symbols ξ.

- • A universal set is a set that contains all the elements in a discussion and is represented by symbols.
- If all the elements of set A are elements in set B, then A is a subset of set B. $A \subset B$
- If $A \not\subset B$ means set A is not a subset of set B.

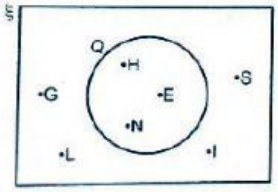
F Match the set below with the correct set of universes.

A = {a, b, e, g, h}	ξ = {K,I, P, A, S}
A = {K, P, S}	ξ = {x:x is an integer and x<13
A = {7, 9, 11}	ξ = {x: x is a factor of 20}
A = {x: x is a factor of 10}	ξ = {Letters}

LIVEWORKSHEETS

G List all the elements of the complementary set below.
(Write in alphabetical/number order)

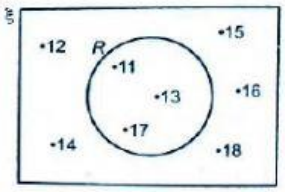
a)



Q =

Q' =

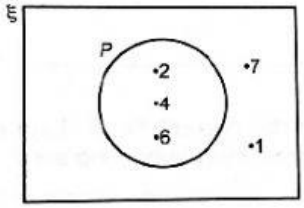
b)



R =

R' =

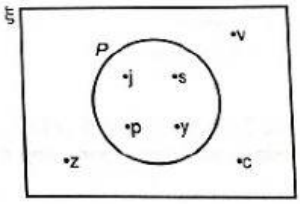
c)



P =

P' =

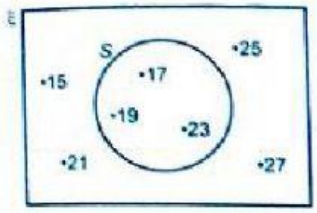
d)



P =

P' =

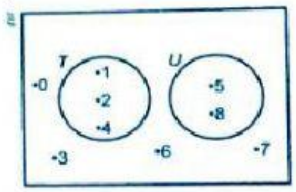
e)



S =

S' =

f)



T =

T' =

U =

U' =

H Exercises

a) Determine the number of elements in each of the following sets. (Choose 1 answer)

i) A = { consonant letters in words INOVATIF}

4 6 8

ii) {multiple of 7 is less than 40}

4 5 6

LIVEWORKSHEETS

b) Mark / on the correct statement and X for the incorrect statement.

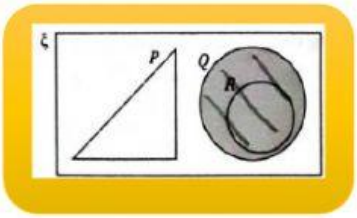
Given $\xi = \{x : 20 < x \leq 50\}$, x is an integer,

P = { Prime Numbers} dan Q = {Multiple of 4}

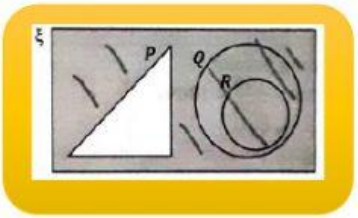
a	The number of subsets of set P is 128	
b	The number of elements in the set Q is 8	
c	One of the subsets in set Q is { }	
d	P = { }	

c) Match the correct region for the set below.

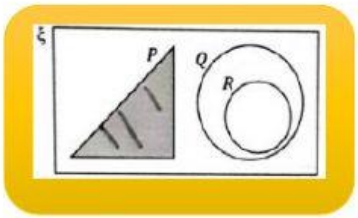
Set P



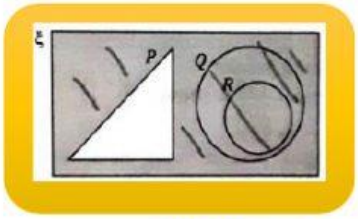
Set P'



Set Q



Set Q'



LIVEWORKSHEETS