

Name: _____ Grade: _____

Date: _____
(DD/MM/YYYY)

Set Theory

1)

Write in words:

(a) $A \subset B$ _____ [1]

(b) $2 \in G$ _____ [1]

(c) $D = \emptyset$ _____ [1]

(d) $n(E) = 10$ _____ [1]

2)

$\xi = \{1, 7, 11, 15\}$. List the members of the following sets:

(i) {multiples of 3}

Answer: {_____} _____ [1]

(ii) {factors of 21}

Answer: {_____} _____ [2]

(iii) {prime numbers}.

Answer: {_____} _____ [2]

3)

$$\begin{aligned} \mathcal{E} &= \{2, 4, 6, 8, 10, 12, 14\} \\ X &= \{2, 4, 8, 10\} \\ Y &= \{6, 8, 14\} \end{aligned}$$

(a) Using the sets above, state whether each statement is true or false.

(i) $8 \notin Y$

Answer: _____ [1]

(ii) $\{4, 6\} \subseteq X$

Answer: _____ [1]

(b) List the members of

(i) $X \cup Y$

Answer: _____ [1]

(ii) Y'

Answer: _____ [2]

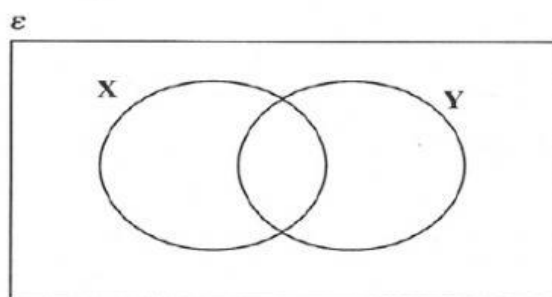
(iii) $n(X)'$

Answer: _____ [2]

(iv) $X \cap Y$

Answer: _____ [1]

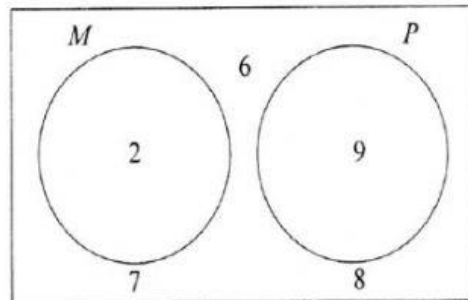
(c) Complete the Venn diagram, writing each member of X and Y in the correct region.



Answer: _____ [4]

4)

Use the Venn diagram below to answer the questions which follow.



List the member(s) of

(i) M ,

Answer: { } [1]

(ii) P ,

Answer: { } [1]

(iii) $M \cup P$,

Answer: { } [1]

(iv) $M \cap P$,

Answer: { } [1]

(v) M' ,

Answer: { } [2]

(vi) ε .

Answer: { } [2]