1.2 Set Notation & Venn Diagrams

Question Paper

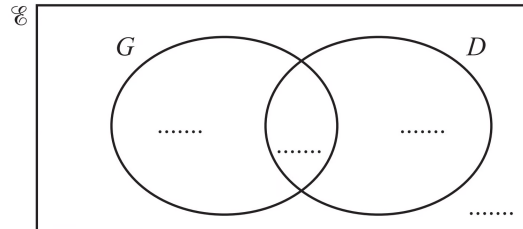| Course	CIE IGCSE Maths
Section	1. Number
Topic	1.2 Set Notation & Venn Diagrams
Difficulty	Medium

Time allowed: 30

Score: /19

Percentage: /100

Question 1

In a class of 40 students:

- 28 wear glasses (G)
- 13 have driving lessons (D)
- 4 do not wear glasses and do not have driving lessons.

i)

Complete the Venn diagram.

[2]

ii)

Use set notation to describe the region that contains a total of 32 students.

[1]

[3 marks]

Question 2

$M = \{x: x \text{ is an integer and } 2 \leq x < 6\}$

i)
Find $n(M)$.

[1]

ii)
Write down a set N where $N \subset M$ and $N \neq \varnothing$.

{...} [1]

[2 marks]

Question 3a

$C = \{x : x \text{ is an integer and } 5 < x < 12\}$ $D = \{5, 10\}$

Select the correct statement from the list below.

$$D = \varnothing \qquad C \cap D = \{10\} \qquad 6 \in D \qquad D \subset C$$
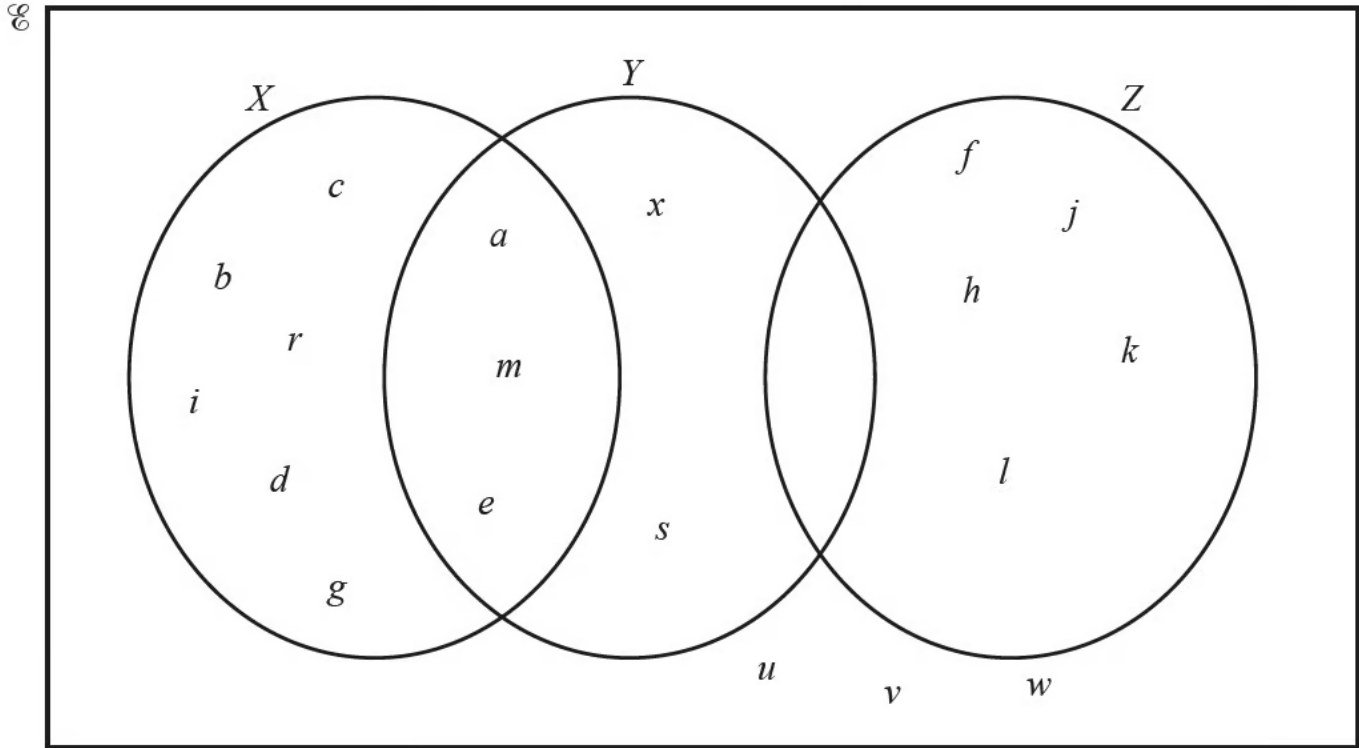
[1]

[1 mark]

Question 3b

Find $n(C \cup D)$.

[1]

[1 mark]

Question 4

Use set notation to complete the statements for the Venn diagram above.

i)
c X

[1]

ii)
.... $= \{a, m, e\}$

[1]

iii)
$Y \cap Z =$ ....

[1]

[3 marks]

Question 5

$$\mathscr{E} = \{0, 1, 2, 3, 4, 5, 6\} \qquad A = \{0, 2, 4, 5, 6\} \qquad B = \{1, 2, 5\}$$

Complete each of the following statements.

$$A \cap B = \{...\}$$

$$\mathrm{n}(B) = ...$$

$$\{0, 4, 6\} = ... \cap ....$$

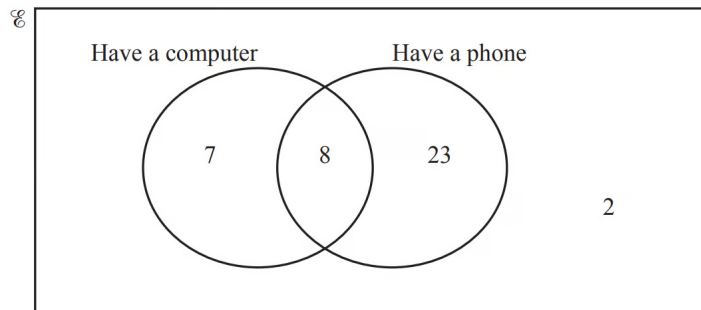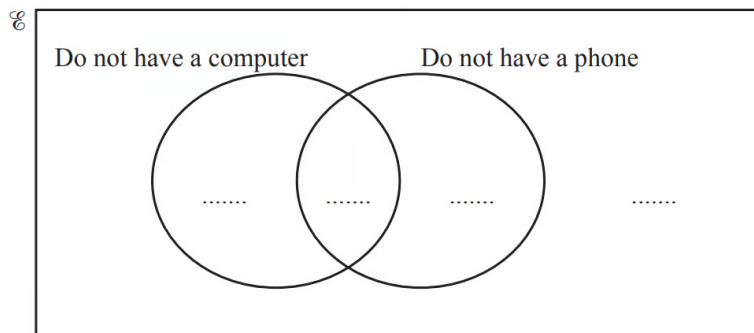$$\{2, 4\} \ .... \ A$$

[4]

[4 marks]

Question 6

40 children were asked if they have a computer or a phone or both.
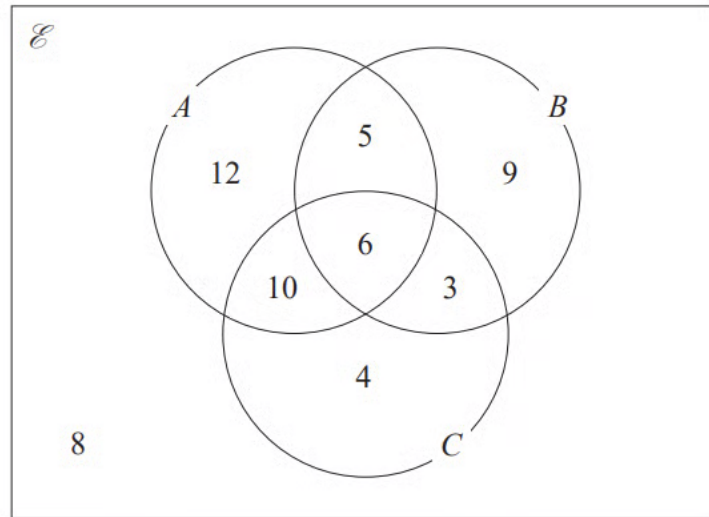The Venn diagram shows the results.

Complete the Venn diagram.

[2]

[2 marks]

Question 7

The Venn diagram shows a universal set, $\mathscr{E}$ and sets A, B and C.

12, 5, 9, 10, 6, 3, 4 and 8 represent the **numbers** of elements.

Find

i)
$n(A \cup B)$

[1]

ii)
$n(A' \cap B')$

[1]

iii)
$n([A \cap B] \cup C)$

[1]

[3 marks]