

1. $A = \{\text{Prime numbers between 10 and 16}\}$
 $B = \{\text{Multiples of 3 between 10 and 16}\}$

(a) List the members of $A \cup B$.

.....
 (2)

(b) What is $A \cap B$?

.....
 (1)

(c) Is it true that $11 \in B$?

.....

Explain your answer.

.....

 (1)

(Total 4 marks)

Q1

Leave blank

8. (a) The universal set, $\mathcal{U} = \{\text{Angela's furniture}\}$.
 $A = \{\text{Chairs}\}$.
 $B = \{\text{Kitchen furniture}\}$.

Describe fully the set $A \cap B$.

.....

 (2)

- (b) $P = \{2, 4, 6, 8\}$.
 $Q = \{\text{Odd numbers less than 10}\}$

(i) List the members of the set $P \cup Q$.

.....

(ii) Is it true that $P \cap Q = \emptyset$?

.....

Explain your answer.

.....

 (3)

(Total 5 marks)

Q8

NOV 08 4H

9. $\mathcal{E} = \{\text{Positive integers less than 11}\}$
 $A = \{\text{Multiples of 3}\}$
 $B = \{\text{Multiples of 2}\}$

(a) List the members of

(i) A ,

.....

(ii) $A \cup B$.

.....

(3)

- (b) $\mathcal{E} = \{\text{Students in class 12Y}\}$
 $P = \{\text{Students who study Mathematics}\}$
 $Q = \{\text{Students who study History}\}$

(i) Describe the members of $P \cap Q$.

.....

(ii) R is also a set of students in class 12Y.

$$P \cap R = \emptyset$$

Use this information to write a statement about the students in set R .

.....

(3)

Q9

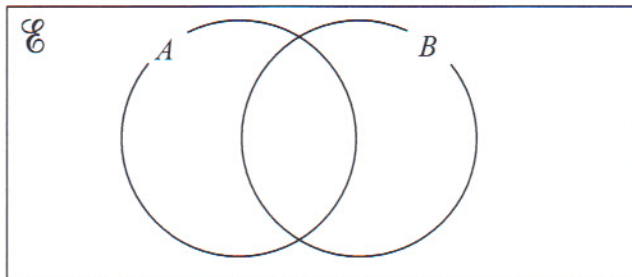
(Total 6 marks)



Nov 04 3H

- 11. The universal set, $\mathcal{U} = \{\text{Whole numbers}\}$
- $A = \{\text{Multiples of 5}\}$
- $B = \{\text{Multiples of 3}\}$

Sets A and B are represented by the circles in the Venn diagram.



- (a) (i) On the diagram, shade the region that represents the set $A \cap B'$.
- (ii) Write down **three** members of the set $A \cap B'$.

.....,,

(2)

$C = \{\text{Multiples of 10}\}$.

- (b) (i) On the diagram draw a circle to represent the set C .
- (ii) Write down **three** members of the set $A \cap B \cap C'$.

.....,,

(2)

(Total 4 marks)

Q11

May 07 4H

15. There are 35 students in a group.
 18 students play hockey.
 12 students play both hockey and tennis.
 15 students play neither hockey nor tennis.

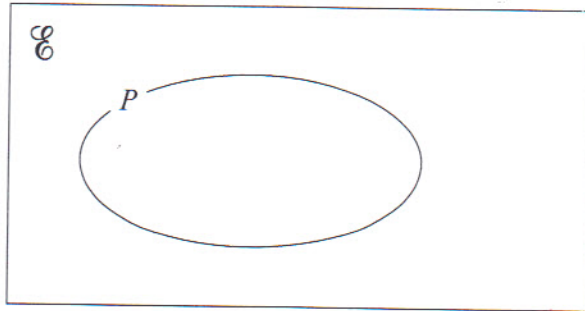
Find the number of students who play tennis.

.....
 (Total 4 marks)

Q15

16.

May 04 4H



Set P is shown on the Venn Diagram.
 Two sets, Q and R , are such that

$$R \subset P$$

$$Q \cap R = \emptyset$$

$$P \cup Q = P$$

Complete the Venn Diagram to show set Q and set R .

(Total 3 marks)

Q16

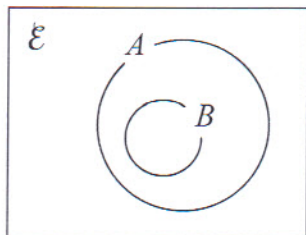
16.

Statements

$A \subset B$ $B \subset A$ $A \cup B = \mathcal{E}$ $A \cap B = \emptyset$ $A \cap B = A$

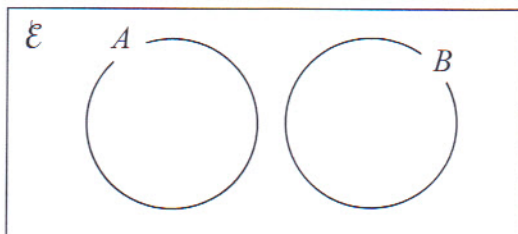
Choose a statement from the box that describes the relationship between sets A and B .

(i)



.....

(ii)

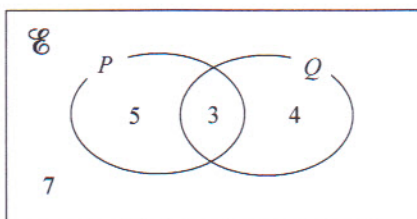


.....

(Total 2 marks)

Q16

19.



Nov 07
4H

The numbers are the **number** of elements in each part of the Venn Diagram.

(i) Find $n(P)$

.....

(ii) Find $n(Q')$

.....

(iii) Find $n(P \cap Q \cap Q')$

.....

(iv) Find $n(P' \cup Q')$

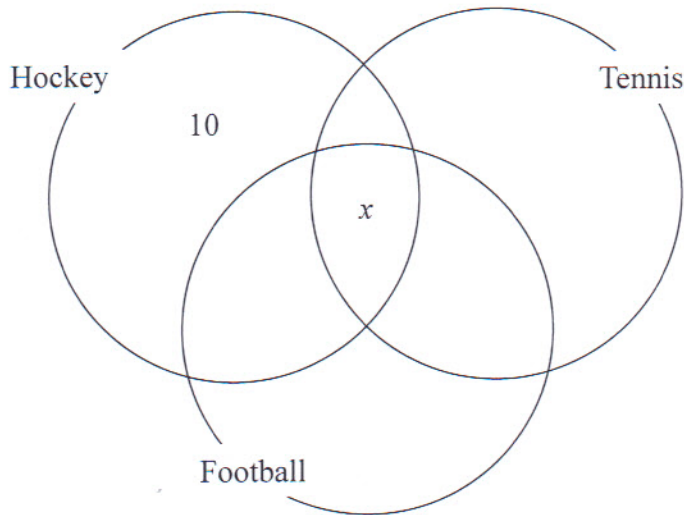
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(Total 4 marks)

Q19

19. Each student in a group plays at least one of hockey, tennis and football.

- 10 students play hockey only
- 9 play football only.
- 13 play tennis only.
- 6 play hockey and football but not tennis.
- 7 play hockey and tennis.
- 8 play football and tennis.
- x play all three sports.



(a) Write down an expression, in terms of x , for the number of students who play hockey and tennis, but not football.

.....
(1)

There are 50 students in the group.

(b) Find the value of x .

$x =$
(3)

(Total 4 marks)

Q19

