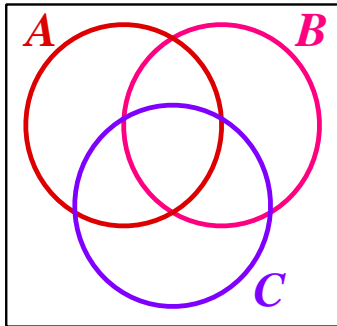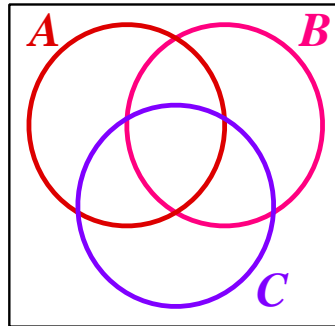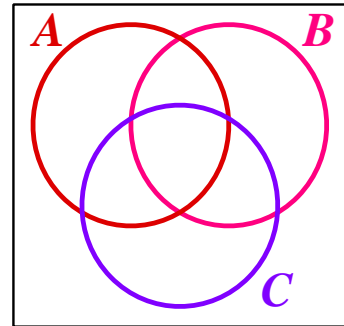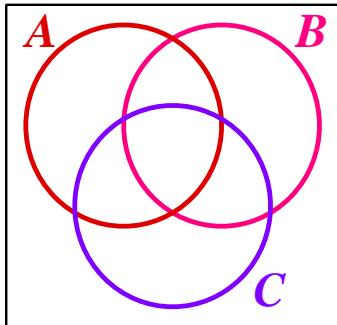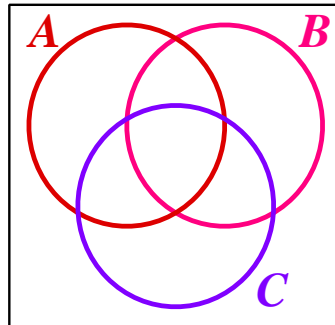**Lesson 2**

2.1 Shady Goings On
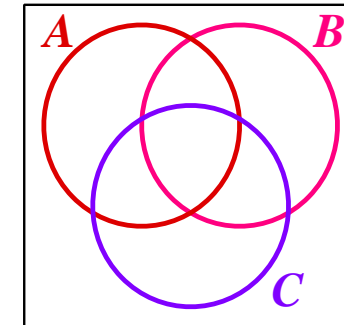
Shade : A

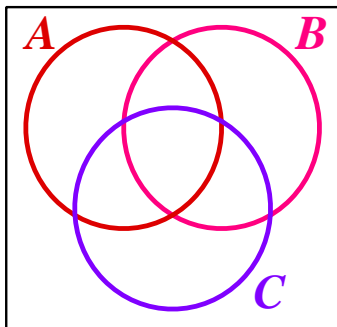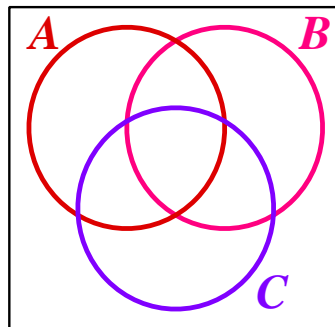Shade : $A \cap B$

Shade : $A \cup B$
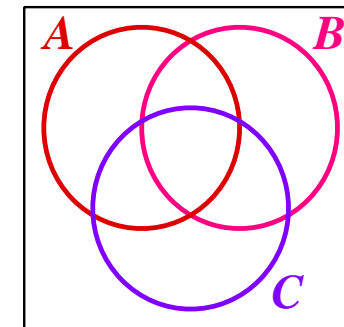
Shade : $A \cup B \cup C$

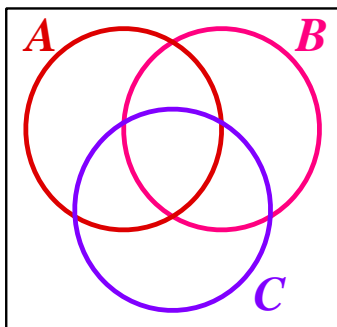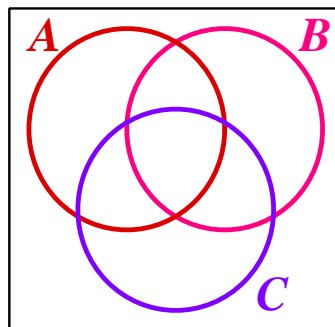Shade : $(A \cup B \cup C)'$

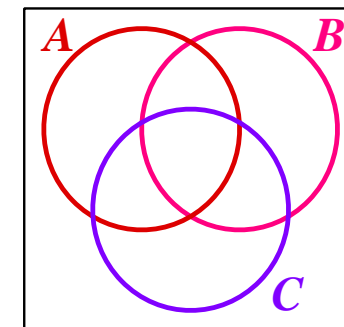Shade : B'

Shade : $B \cap C'$

Shade : $(B \cap C')'$

Shade : $B \cup C$

Shade : $(B \cup C)'$

Shade : $C \cap A'$

Shade : $C \cup A'$

[12 marks]

2.2 Exercise

Question 1

Let : A be the set of numbers in the infinite sequence 1, 5,   9, 13, 17, ...
            B be the set of numbers in the infinite sequence 3, 7, 11, 15, 19, ...

(**i**)   List the first few members of the set $A \cup B$

[2 marks]

(**ii**)   What is the special name given to the set $A \cup B$?

[1 mark]

(**iii**)   Use a Set Theory Symbol to describe $A \cap B$
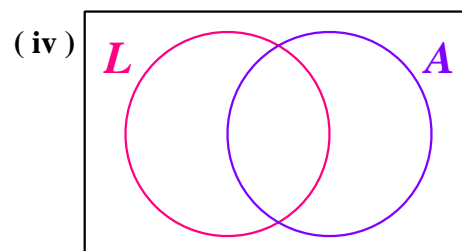
[1 mark]

Question 2

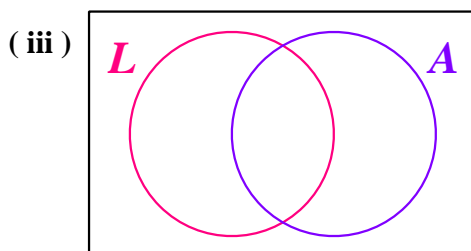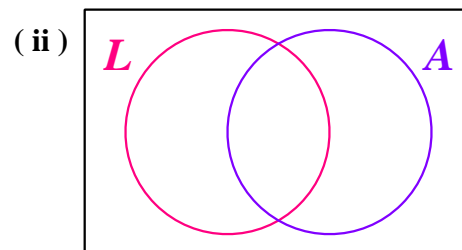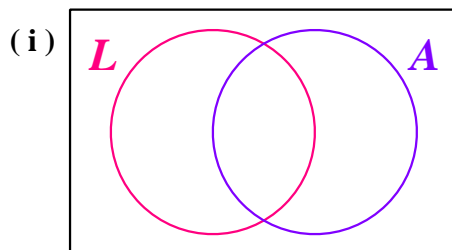On the Venn Diagrams below, shade the part that represents;

(**i**) $L \cup A$ (**ii**) $L \cup A'$

(**iii**) $L' \cup A$ (**iv**) $L' \cup A'$

(**i**)

(**ii**)

(**iii**)
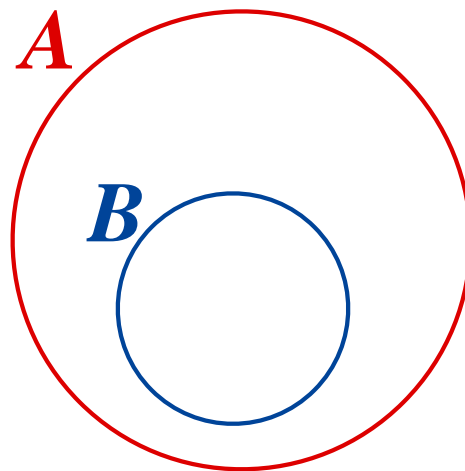

(**iv**)

[4 marks]

Question 3

Sets *A* and *B* are :

$$A = \{ \text{ The multiples of 3 that are less than 20 } \}$$
$$B = \{ \text{ The multiples of 6 that are less than 20 } \}$$

(**i**)   List the elements of set *A*

[**1 mark**]

(**ii**)   List the elements of set *B*

[**1 mark**]

(**iii**)   Complete the Venn Diagram to show the relationship between sets *A* and *B*

[**2 marks**]

(**iv**)   The Venn Diagram is drawn in an unusual way.
Explain why this has been done.

[**2 marks**]

Question 4

In this question,

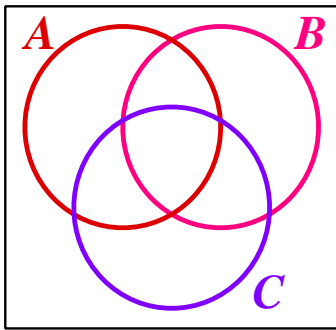$$\varepsilon = \{ \text{ all cars in the world } \}$$
$$P = \{ \text{ pink cars } \}$$
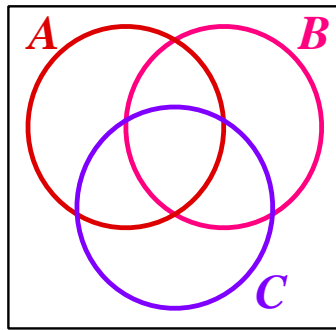$$R = \{ \text{ Rolls-Royce cars } \}$$

(**i**)   Describe the set $P \cap R$ in words

[**2 marks**]

(**ii**)   George writes that $P \cap R = \varnothing$
Describe in words what George is claiming.
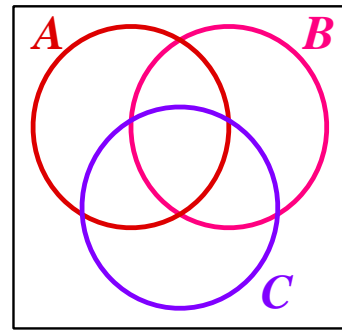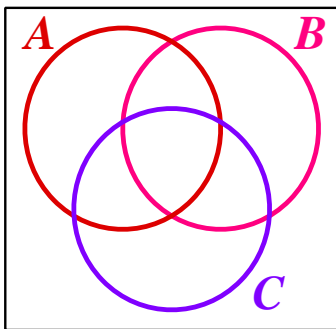(Do you think George is correct ?)

[**2 marks**]
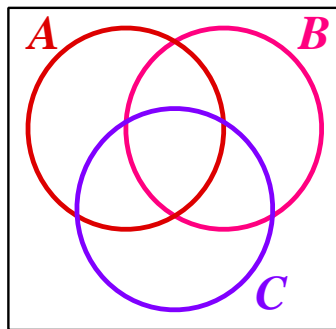
Question 5

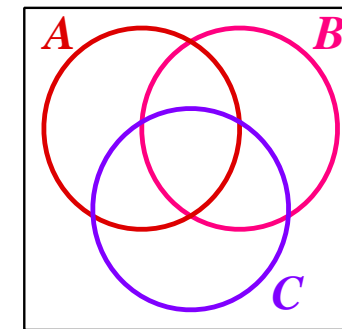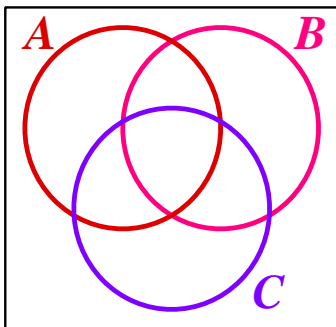Shade : $B \cap C'$

Shade : $B \cup B'$
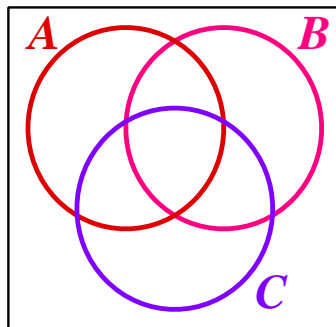

Shade : $B \cup C'$
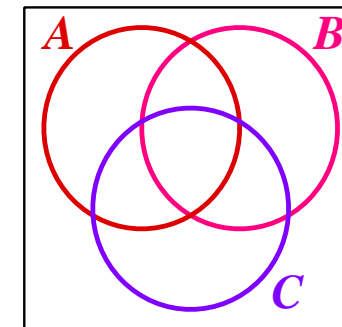
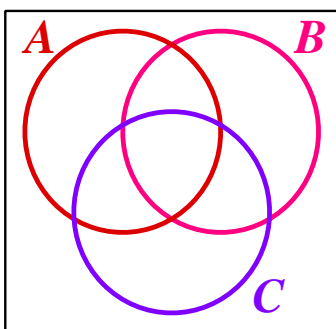

Shade : $A \cap C$

Shade : $(A \cap C)'$

Shade : $(A \cup C)'$

Shade : $B' \cap C'$
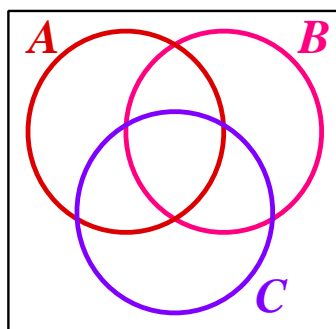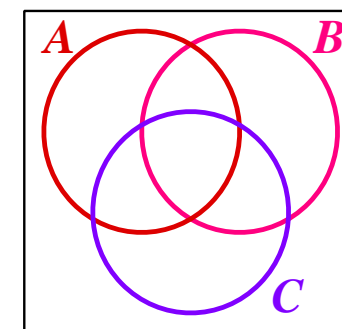

Shade : $A \cap A$

Shade : $A \cup A$

Shade : $B \cup C$

Shade : $(A \cap B \cap C)'$

Shade : $(A \cup B \cup C)'$

[12 marks]