1. Draw six diagrams similar to Figure 1 and shade the following sets:

a) $A \cap B$ b) $A \cup B$ c) A'

d) $A' \cap B$ e) $B' \cap A$ f) $(B \cup A)'$
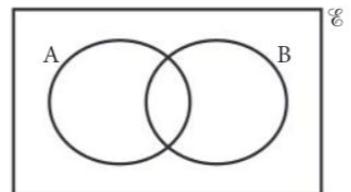
Figure 1

2. Draw four diagrams similar to Figure 2 and shade the following sets:

a) $A \cap B$ b) $A \cup B$ c) $B' \cap A$ d) $(B \cup A)'$
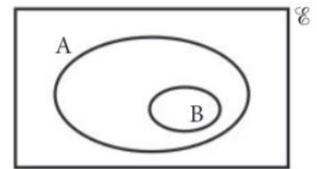
**Figure 2**

3. Draw four diagrams similar to Figure 3 and shade the following sets:

a) $A \cup B$ b) $A \cap B$ c) $A \cap B'$ d) $(B \cup A)'$
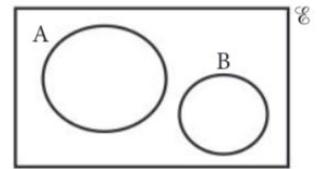

Figure 3

4. Draw eleven diagrams similar to Figure 4 and shade the following sets:

a) $A \cap B$ b) $A \cup C$ c) $A \cap (B \cap C)$

d) $(A \cup B) \cap C$ e) $B \cap (A \cup C)$ f) $A \cap B'$

g) $A \cap (B \cup C)'$ h) $(B \cup C) \cap A$ i) $C' \cap (A \cap B)$

j) $(A \cup C) \cup B'$ k) $(A \cup C) \cap (B \cap C)$
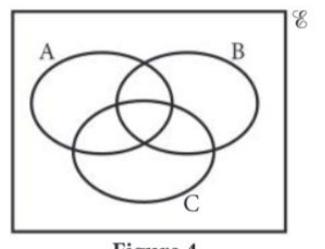
Figure 4

5. Draw nine diagrams similar to Figure 5 and shade the following sets:

a) $(A \cup B) \cap C$ b) $(A \cap B) \cup C$ c) $(A \cup B) \cup C$

d) $A \cap (B \cup C)$ e) $A' \cap C$ f) $C' \cap (A \cup B)$

g) $(A \cap B) \cap C$ h) $(A \cap C) \cup (B \cap C)$ i) $(A \cup B \cup C)'$
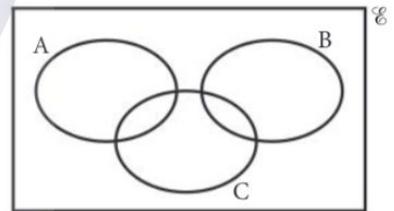

Figure 5

**6.** Copy each diagram and shade the region indicated.

a)

$X' \cap Y$

b)

$E \cup F$

c)

$A \cap B$

d)

$(M \cap N)'$
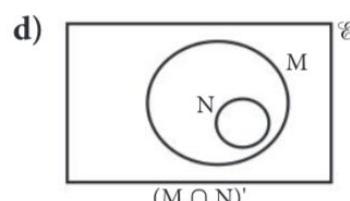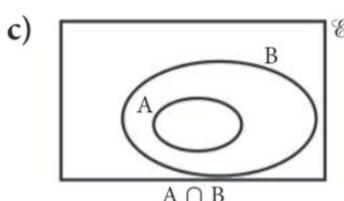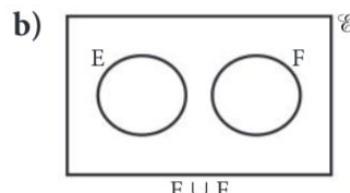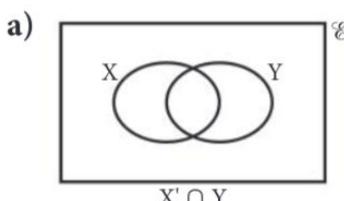
7. Describe the shaded region.

a)

b)

c)

d)
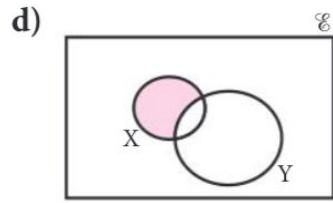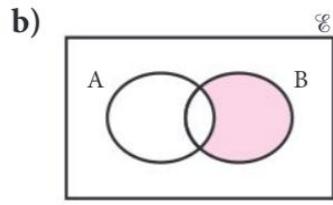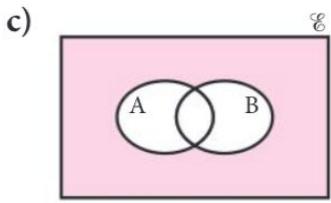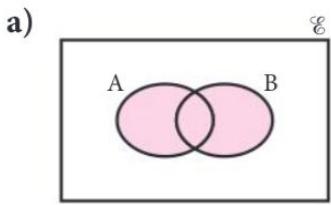
Answer
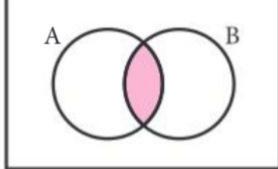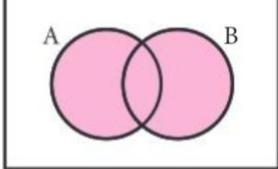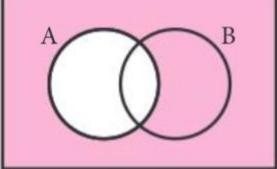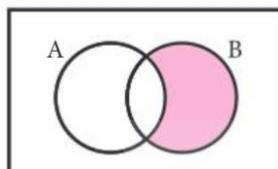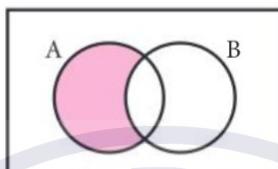
1. a)
   b)
   c)
   d)
   e)
   f)
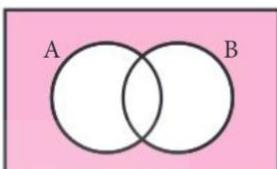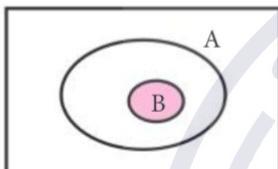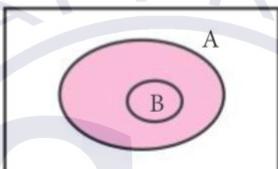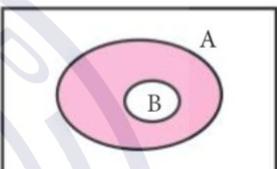
2. a)
   b)
   c)
   d)
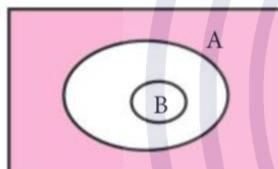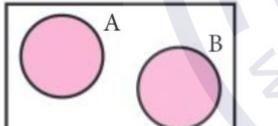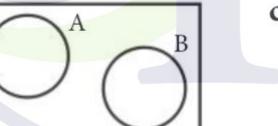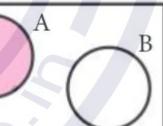
3. a)
   b)
   c)
   d)
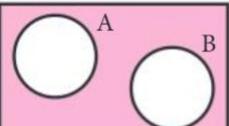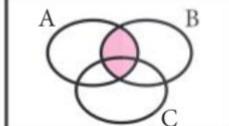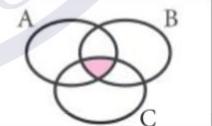
4. a)
   b)
   c)
   d)
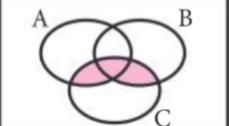
e)
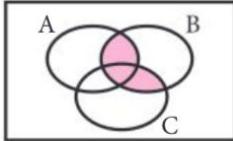
f)
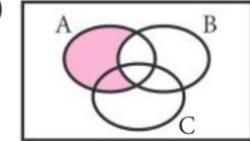
g)
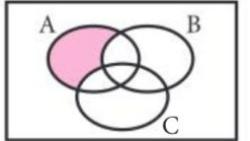
h)
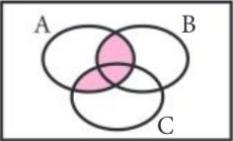
i)
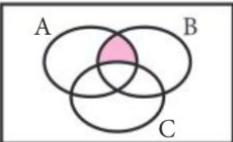
j)
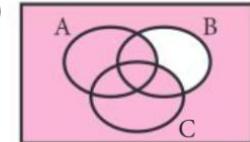
k)
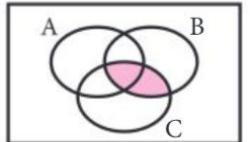
5. a)
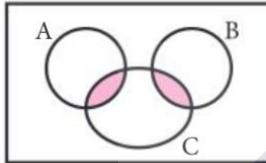
b)
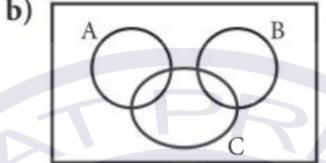
c)
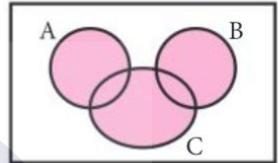
d)
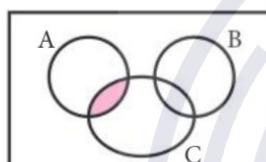
e)
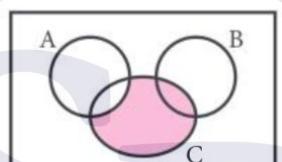
f)
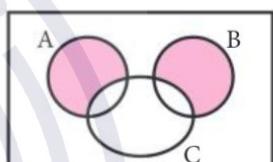
g)

h)

i)

6. a)

b)

c)

d)

7. a) $A \cup B$ **b)** $A' \cap B$ **c)** $(A \cup B)'$ **d)** $X' \cap Y$