$(A \cup B)'$
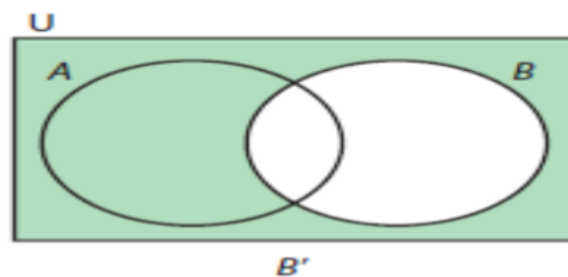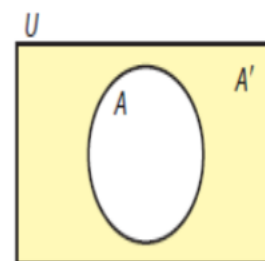
The complement of a set (A')

The complement of a set A is the set of elements in the universal set U which are not in A.

It is written as **A'** and is illustrated by the shaded area in the given Venn diagram.

The cardinal number of a set (#)

The number of elements in a set is called the **cardinal number** of the set.
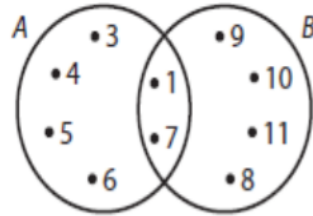
The symbol # is used to denote the cardinal number.

From the given Venn diagram,

$\#A = 6$ $\#B = 6$
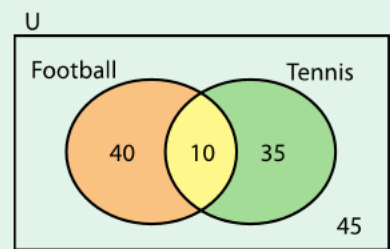
$\#(A \cap B) = 2$ $\#(A \cup B) = 10.$

Example 1

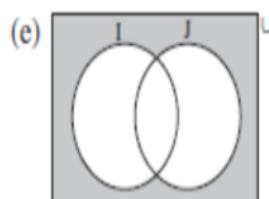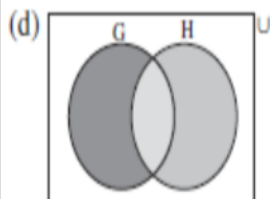The Venn diagram shows the sports played by members of a club.

How many members played

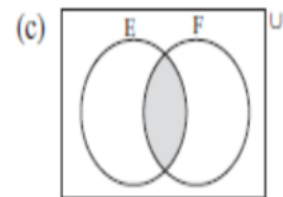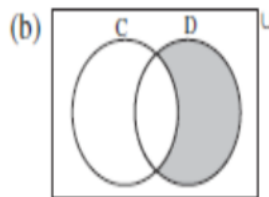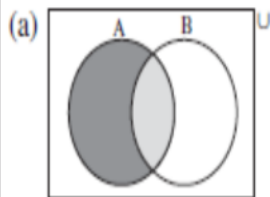(i) both football and tennis

(ii) tennis but not football

(iii) neither of these two games

(iv) football or tennis?

157

1. Name the shaded sets.

(a) A B U

(b) C D U

(c) E F U

(d) G H U

(e) I J U

Algebra

Chapter 3

Venn Diagrams, Unions, and Intersections