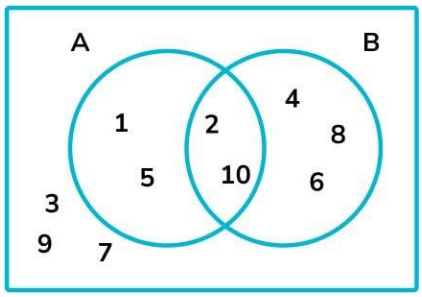
VENN DIAGRAM

Set is a collection of objects. We identify a set using curly brackets. Venn diagrams sort objects, called elements, into two or more sets.



This diagram shows the set of elements {1,2,3,4,5,6,7,8,9,10} sorted into the following sets.
Set A= factors of 10
Set B=even numbers

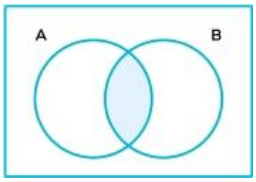
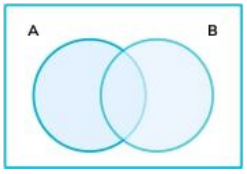
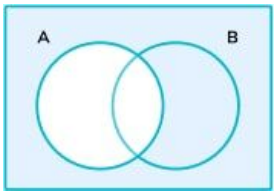
The numbers in the overlap (intersection) belong to both sets. Those that are not in set A or set B are shown outside of the circles.

Different sections of a Venn diagram are denoted in different ways.

ξ represents the whole set, called the universal set.

$\emptyset$ represents the empty set, a set containing no elements.

Let's check out some other set notation examples!

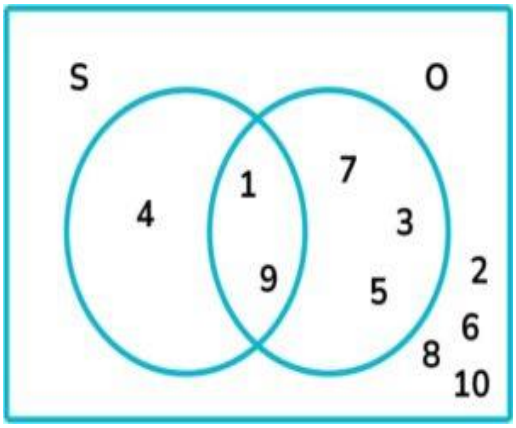
$A \cap B$	A' and B' The intersection of A and B. The elements in both sets A and B.	
$A \cup B$	A' or B' The union of A or B.. Any element in set A or set B.	
A'	Not A' The complement of A. Any element not in A.	

1. Place these values onto the following Venn diagram and use your diagram to find the

   Number of elements in the set S∪O.

ξ={1,2,3,4,5,6,7,8,9,10}

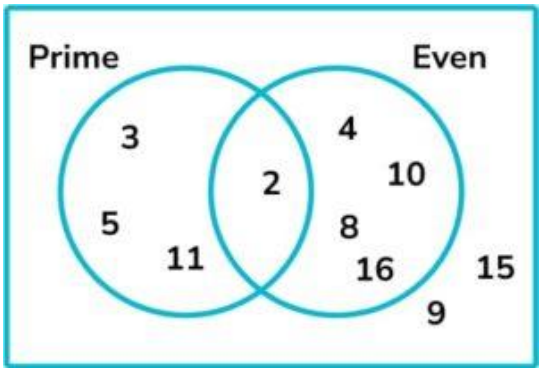
S= square numbers O= odd numbers



SUO is the union of S or O, so it includes any element in S, O or both. The total number of

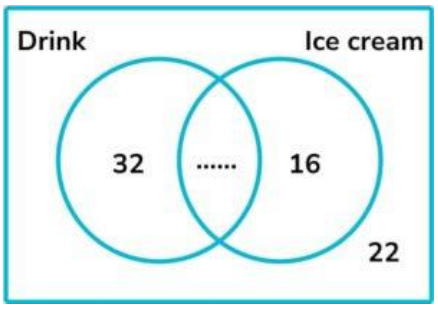
Elements in S, O or both is 6

2) The Venn diagram below shows a set of numbers that have been sorted into prime numbers and even numbers.



A number is chosen at random. Find the probability that the number is prime and not even.

3) Some people visit the theatre. The Venn diagram shows the number of people who bought ice cream and drinks in the interval.



Ice cream is sold for Rs.3 and drinks are sold for Rs.2. A total of Rs.262 is spent. How many

People bought both a drink and an ice cream?

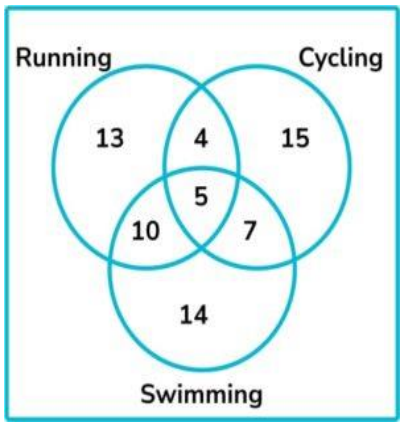
4) 50 people are asked whether they have been to France or Spain.

18 people have been to France.
23 people have been to Spain.

6 people have been to both.

By representing this information on a Venn diagram, find the probability that a person chosen at random **has not been** to Spain or France.

5) Some people were asked whether they like running, cycling or swimming. The results are shown in the Venn diagram below.



One person is chosen at random. What is the probability that the person likes running and cycling?