

Stats Prep 7

Q1.

A group of 100 students are asked if they like folk music, rock music or soul music.

All students who like folk music also like rock music

No students like both rock music and soul music

75 students do not like soul music

12 students who like rock music do not like folk music

30 students like folk music

(a) Draw a Venn diagram to illustrate this information.

(4)

Find the probability that a randomly chosen student

(b) does not like folk music, rock music or soul music,

(1)

(c) likes rock music,

(1)

(d) likes folk music or soul music.

(1)

Q2.

The following shows the results of a survey on the types of exercise taken by a group of 100 people.

65 run

48 swim

60 cycle

40 run and swim

30 swim and cycle

35 run and cycle

25 do all three

(a) Draw a Venn Diagram to represent these data.

(4)

Find the probability that a randomly selected person from the survey

(b) takes none of these types of exercise,

(2)

(c) swims but does not run,

(2)

(d) takes at least two of these types of exercise.

(2)

Q3.

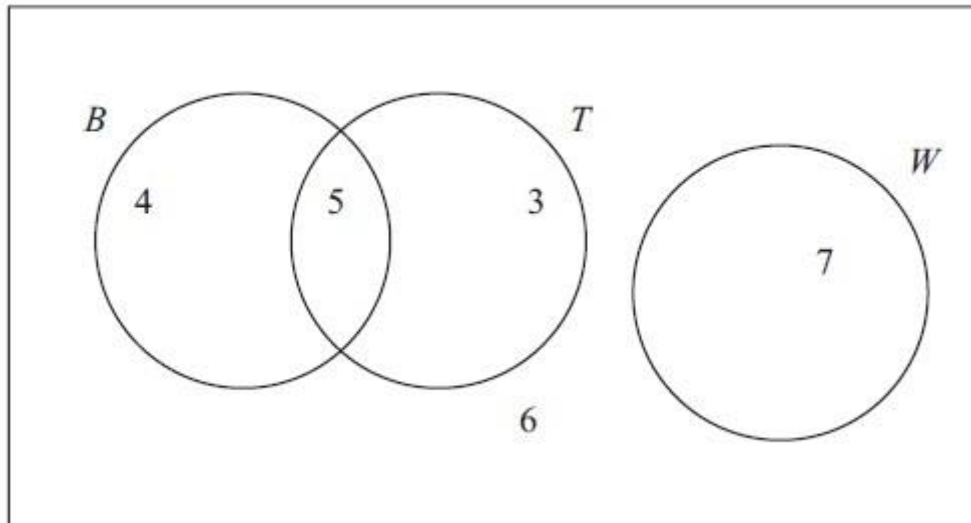


Figure 1

Figure 1 shows how 25 people travelled to work.

Their travel to work is represented by the events

- B* bicycle
- T* train
- W* walk

One person is chosen at random.

Find the probability that this person

(a) walks to work,

(1)

(b) travels to work by bicycle and train.

(1)

Q4.

Jake and Kamil are sometimes late for school.
The events J and K are defined as follows

J = the event that Jake is late for school

K = the event that Kamil is late for school

$$P(J) = 0.25, P(J \cap K) = 0.15 \text{ and } P(J' \cap K') = 0.7$$

On a randomly selected day, find the probability that

(a) at least one of Jake or Kamil are late for school,

(1)

(b) Kamil is late for school.

(2)

Q5.

A group of office workers were questioned for a health magazine and $\frac{2}{5}$ were found to take regular exercise. When questioned about their eating habits $\frac{2}{3}$ said they always eat breakfast and, of those who always eat breakfast $\frac{9}{25}$ also took regular exercise. Find the probability that a randomly selected member of the group

(a) always eats breakfast and takes regular exercise,

(2)

(b) does not always eat breakfast and does not take regular exercise.

(4)