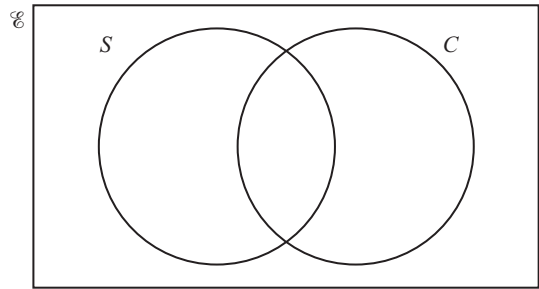


12 A fitness club has 100 members.

- 60 swim (S).
- 70 cycle (C).
- 25 do not swim or cycle.



(a) Complete the Venn diagram.

(b) One member of the fitness club is chosen at random.

For this member, find

(i) $P(C)$

..... [1]

(ii) $P(S \cap C)$

..... [1]

(iii) $P(S \cup C')$.

..... [1]

25 Mahir picks one number at random from the numbers 5, 10 and 15. He then picks one number at random from the numbers 4, 5 and 6. He adds the two numbers.

The sample space diagram shows some of the possible outcomes.

		First number		
		5	10	15
Second number	4		14	19
	5		15	20
	6		16	21

(a) Complete the sample space diagram. [1]

(b) Given that the total of the two numbers is odd, find the probability that one of the numbers added is 15.

..... [2]

26 Write as a single fraction in its simplest form.

(a) $\frac{mp}{25y} \times \frac{15}{m}$

..... [2]

(b) $\frac{3}{2x-5} + \frac{4}{x-3}$

4

1

2

3

4

5

6

7

Samira picks one of these cards at random and replaces it.

(a) Find the probability that she picks an odd number.

..... [1]

(b) Samira repeats this 35 times.

Calculate the number of times Samira is expected to pick an odd number.

..... [1]