

Probability

ANSWERS

Calculator | 30 minutes | Total marks: 30

Name Class

- 1 A fair spinner has 8 equal sections. 3 are red, 4 are blue and 1 is green.
The spinner is spun once. Write down the probability that it lands on

(a) red

Answer $\frac{3}{8}$ (1) [1 mark]

(b) a colour that is not blue

Answer $\frac{4}{8}$ (1) [1 mark]

(c) yellow

Answer 0 (1) [1 mark]

- 2 A bag contains red, blue, green and yellow counters. The table shows the probability of taking each colour.

Colour	red	blue	green	yellow
Probability	0.3	0.25	0.3	0.15

(a) Complete the table.

$$1 - 0.3 - 0.25 - 0.15 \text{ (1)}$$

Answer 0.3 (1) [2 marks]

(b) Work out the probability of taking a red counter or a blue counter.

Answer 0.55 (1) [1 mark]

3

The probability of winning a game is 0.2

The game is played 150 times.

Work out an estimate for the number of wins.

$$0.2 \times 150 \text{ (1)}$$

Answer 30 (1)

[2 marks]

4

Spinner A has the numbers 1, 2 and 3. Spinner B has the numbers 1, 2, 3 and 4

Both spinners are fair. Each is spun once and the two numbers are added.

(a) Complete the table of totals.

+	1	2	3	4
1	2	3	4	5
2	3	4	5	6
3	4	5	6	7 (1)(1)

[2 marks]

(b) Work out the probability that the total is 5

$$\text{Answer } \frac{3}{12} \text{ (1)}$$

[1 mark]

5

A drawing pin is dropped 200 times. It lands point up 124 times.

(a) Work out an estimate for the probability that the pin lands point up.

$$\text{Answer } \frac{0.62}{1} \text{ (1)}$$

[1 mark]

(b) How could the estimate be made more reliable?

Drop the pin more times (1)

[1 mark]

6

The two way table shows information about 50 students.

	Left handed	Right handed	Total
Boys	4	22	26
Girls	3	21	24
Total	7	43	50

(a) A student is chosen at random.

Write down the probability that the student is left handed.

Answer $\frac{7}{50}$ (1)

[1 mark]

(b) Write down the probability that the student is a right handed girl.

Answer $\frac{21}{50}$ (1)

[1 mark]

(c) A boy is chosen at random.

Work out the probability that he is left handed.

Answer $\frac{4}{26}$ (1)(1)

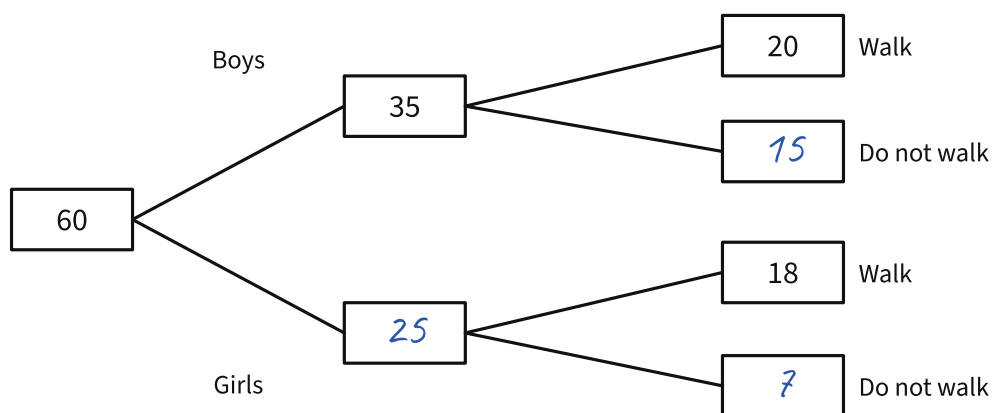
[2 marks]

7

60 students are asked how they travel to school.

35 of the students are boys. 20 boys walk and 18 girls walk.

(a) Complete the frequency tree.



1 mark for each correct number

[3 marks]

(b) A student is chosen at random.

Write down the probability that the student walks to school.

Answer $\frac{38}{60}$ (1)

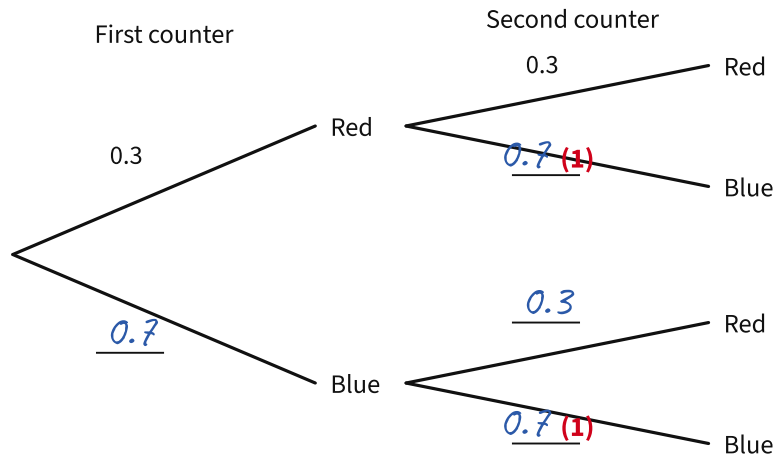
[1 mark]

8

A bag contains 3 red counters and 7 blue counters.

A counter is taken at random and put back. Then a second counter is taken.

(a) Complete the tree diagram.



[2 marks]

(b) Work out the probability that both counters are red.

$$0.3 \times 0.3 \text{ (1)}$$

Answer 0.09 (1)

[2 marks]

(c) Work out the probability that the two counters are different colours.

$$0.3 \times 0.7 + 0.7 \times 0.3 \text{ (1)}$$

Answer 0.42 (1)

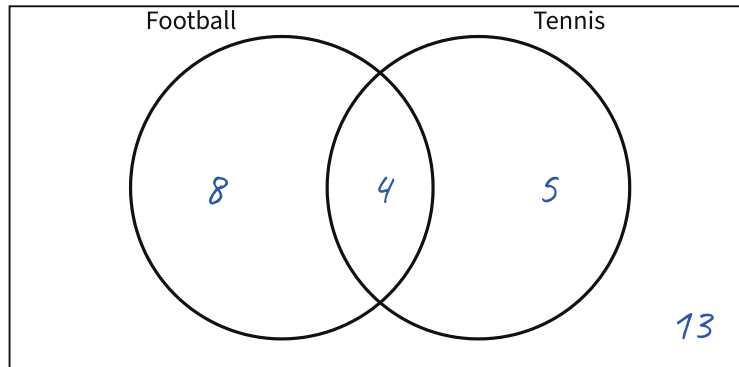
[2 marks]

9

There are 30 students in a class.

12 play football, 9 play tennis and 4 play both.

(a) Complete the Venn diagram.



4 in the middle (1)
8, 5 and 13 (1)

[2 marks]

(b) A student is chosen at random.

Write down the probability that the student plays neither sport.

Answer $\frac{13}{30}$ (1)

[1 mark]

Question	Topic	RAG
1	I can find the probability of an event	
2	I know that the probabilities of all outcomes add up to 1	
3	I can work out an expected number	
4	I can use a sample space diagram	
5	I can use relative frequency	
6	I can find probabilities from a two way table	
7	I can use a frequency tree	
8	I can use a tree diagram	
9	I can use a Venn diagram	