1. Question | 4024 May-June 2025 P2 V2 Q6

6 In a survey, students are asked to choose their favourite type of movie.
The table shows the results.

Type of movie	Romance	Thriller	Science Fiction	Other
Relative frequency	0.1		0.35	0.3

(a) Calculate the relative frequency of a student choosing Thriller.

..... [2]

(b) 500 students take part in the survey.

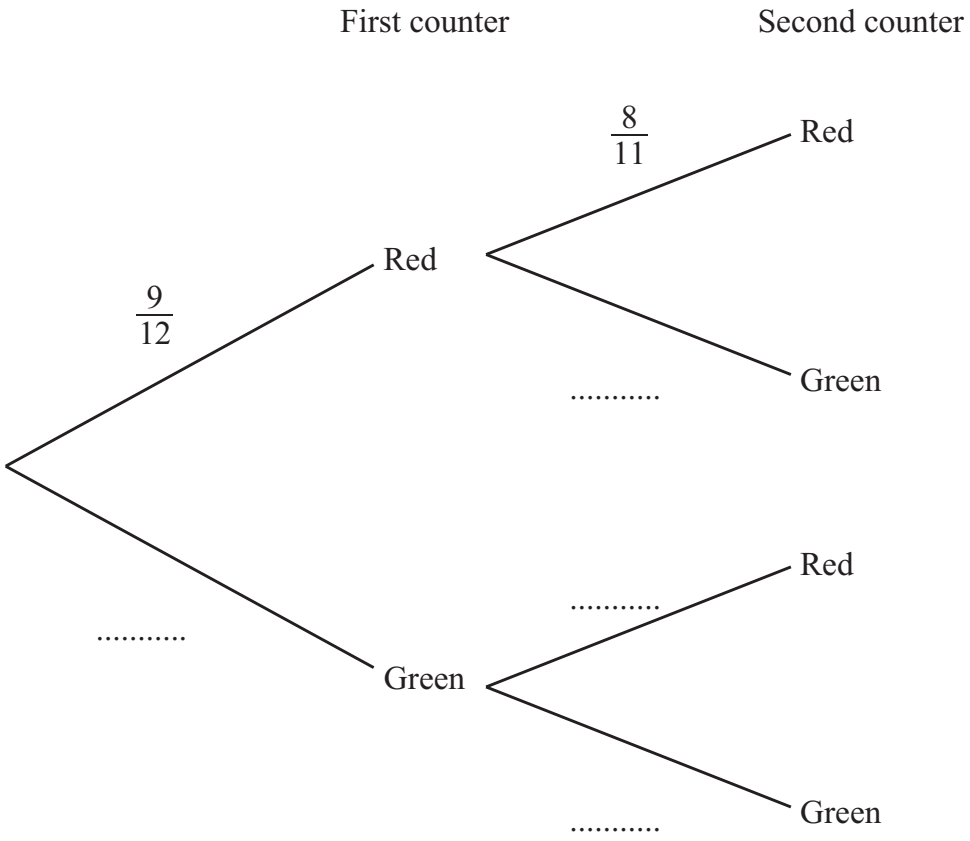
Calculate the number of students who choose Science Fiction.

..... [1]

2. Question | 4024 May-June 2025 P2 V2 Q13

13 A bag contains 9 red counters and 3 green counters.
Lee takes two counters from the bag at random without replacement.

(a) Complete the tree diagram.



[2]

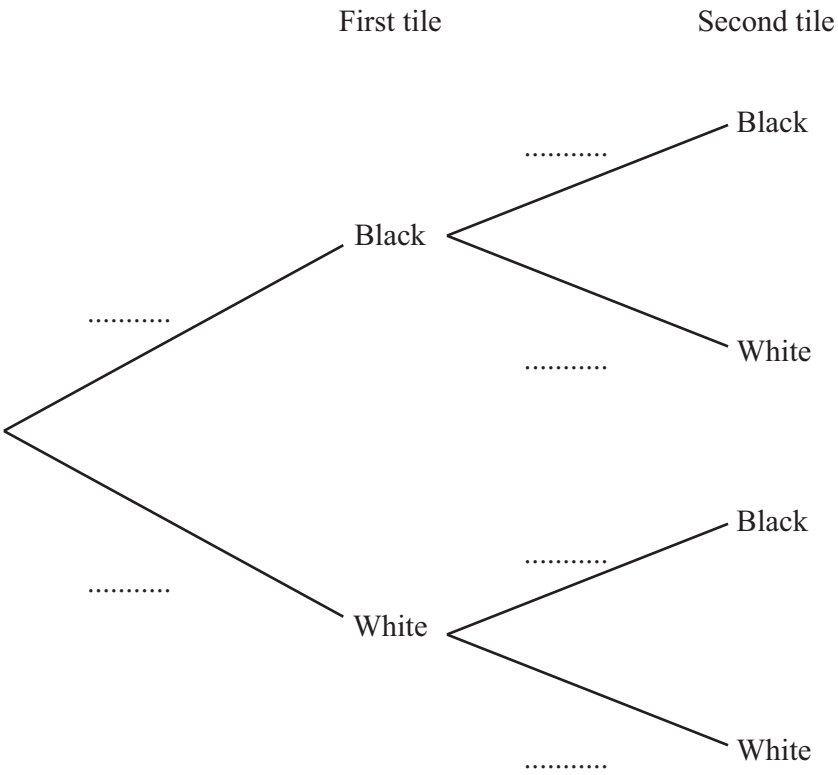
(b) Work out the probability that both counters are red.

..... [1]

3. Question | 4024 May-June 2025 P2 V3 Q8

8 A bag contains 4 black tiles and 6 white tiles.
A tile is chosen at random from the bag and is then replaced.
A second tile is then chosen at random.

(a) Complete the tree diagram.



[2]

(b) Work out the probability that both tiles are white.

..... [1]

4. Question | 4024 May-June 2025 P2 V3 Q23

23 A box contains 13 pencils.
There are 4 red pencils, 7 green pencils and 2 yellow pencils in the box.
Two pencils are chosen at random from the box without replacement.

Work out the probability that the two pencils are different colours.

..... [4]

5. Question | 4024 Oct-Nov 2025 P2 V2 Q11

11 A factory makes batteries.
A batch of 2000 batteries are tested and 28 are found to be faulty.

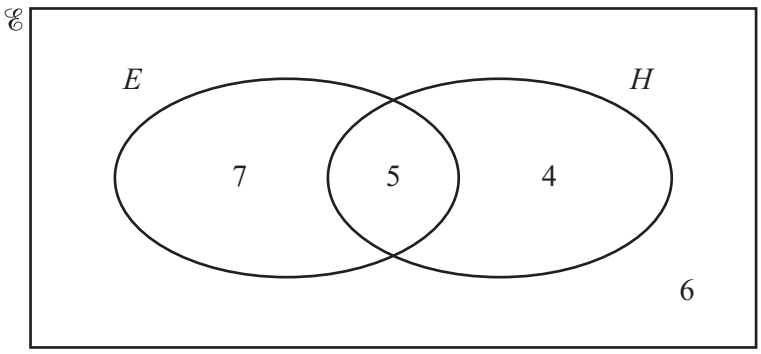
The factory makes 125 000 batteries.

Calculate the number of these 125 000 batteries that are expected to be faulty.

..... [2]

6. Question | 4024 Oct-Nov 2025 P2 V2 Q19

19 A group of 22 students are asked if they study Economics (E) or History (H).
The Venn diagram shows the results.



(a) Write down the number of students who study both Economics and History.

..... [1]

(b) Find $n(E \cap H')$.

..... [1]

(c) Three of the students from the group are selected at random.

Find the probability that they all study History.

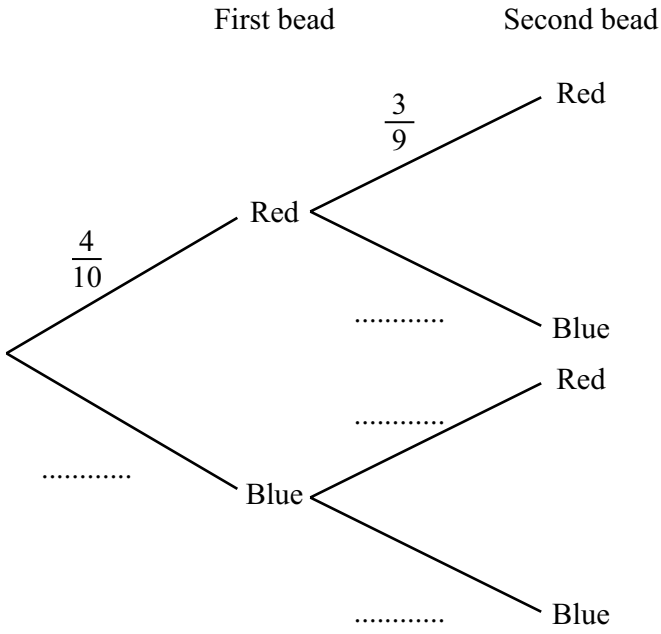
..... [3]

7. Question | 4024 Specimen 2025 P2 Q10

10 Anna has a bag containing 10 beads.
There are 4 red beads and the rest are blue.

(a) Anna takes two beads from the bag at random without replacement.

Complete the tree diagram.



[2]

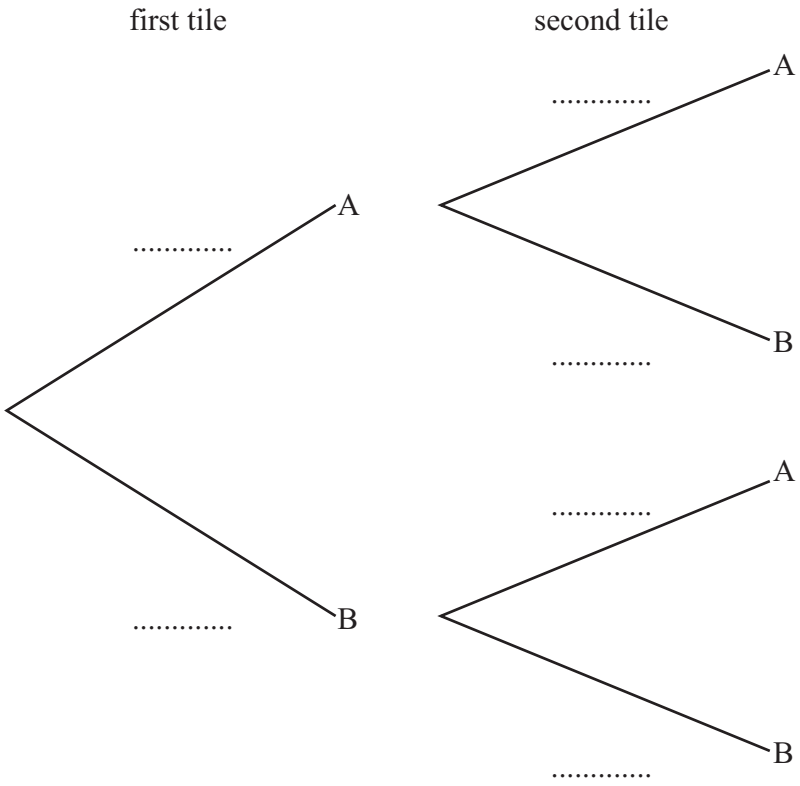
(b) Calculate the probability that Anna takes two red beads.

..... [1]

8. Question | 4024 May-June 2026 P2 V2 Q8

8 A bag contains 7 tiles labelled A and 5 tiles labelled B.
A tile is chosen at random from the bag and is then replaced.
A second tile is then chosen at random from the bag.

(a) Complete the tree diagram.



[2]

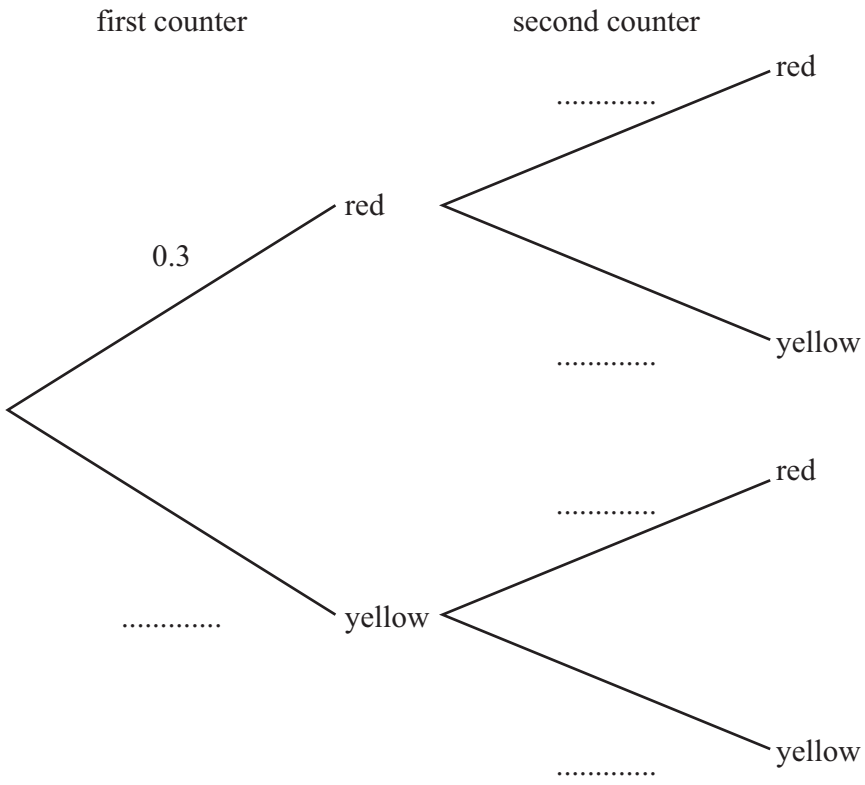
(b) Work out the probability that both tiles are labelled A.

..... [1]

9. Question | 4024 May-June 2026 P2 V3 Q10

10 A bag contains red counters and yellow counters.
The probability of choosing a red counter is 0.3 .
A counter is chosen at random from the bag and is then replaced.
A second counter is then chosen at random.

(a) Complete the tree diagram.



[2]

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

..... [1]