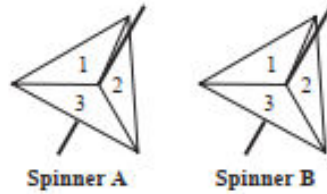


**PROBABILITY TREE**

**Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier**

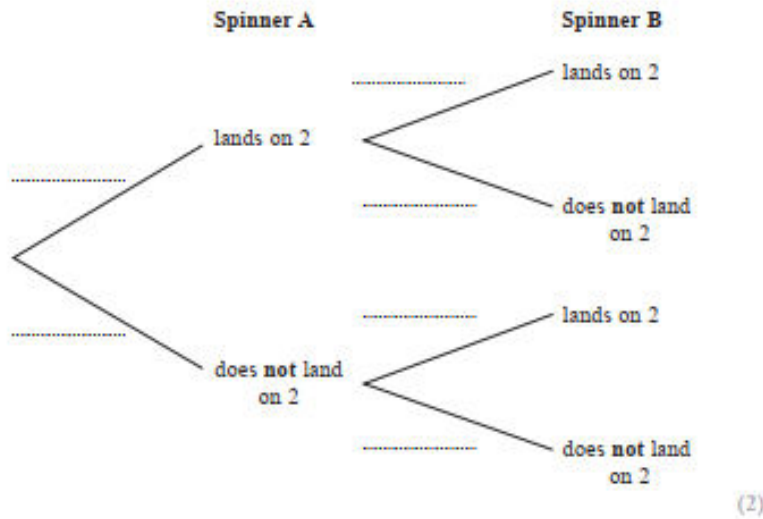
**1.**

5 Amanda has two fair 3-sided spinners.



Amanda spins each spinner once.

(a) Complete the probability tree diagram.



(b) Work out the probability that Spinner A lands on 2 and Spinner B does not land on 2

(2)

(2)

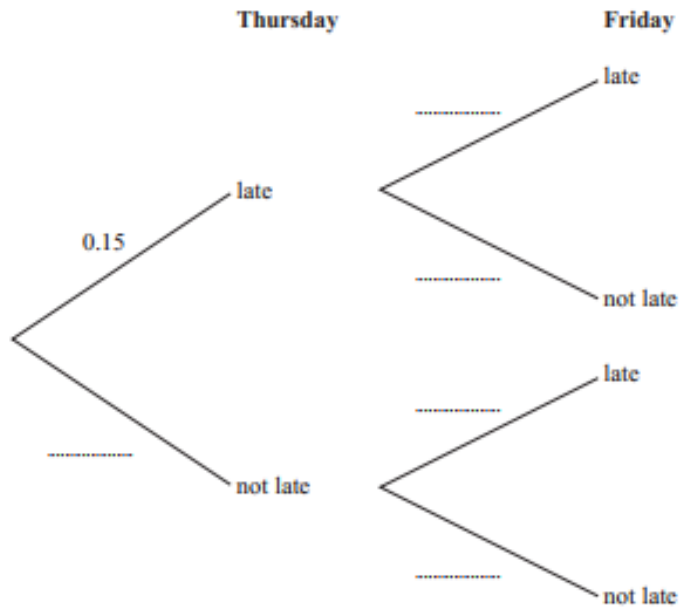
(Total for Question 5 is 4 marks)

**Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Higher Tier**

**2.**

10 Mary travels to work by train every day.  
 The probability that her train will be late on any day is 0.15

(a) Complete the probability tree diagram for Thursday and Friday.



(2)

(b) Work out the probability that her train will be late on at least one of these two days.

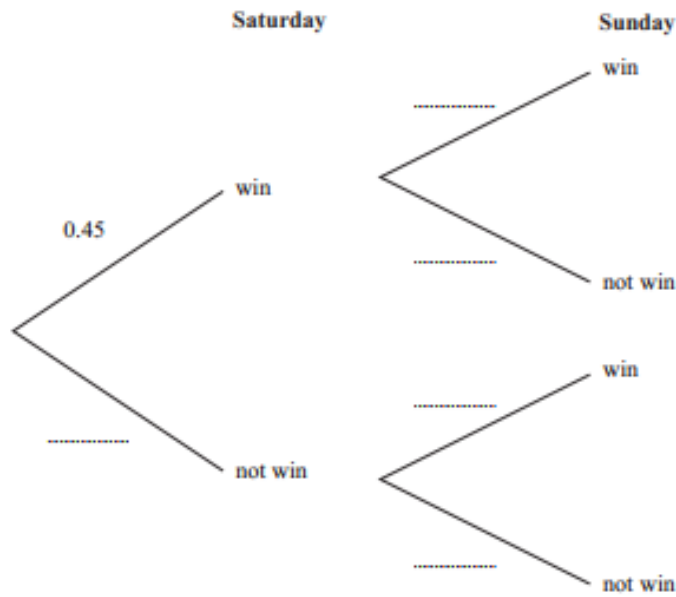
(3)

(Total for Question 10 is 5 marks)

15 A darts team is going to play a match on Saturday and on Sunday.  
 The probability that the team will win on Saturday is 0.45

If they win on Saturday, the probability that they will win on Sunday is 0.67  
 If they do **not** win on Saturday, the probability that they will win on Sunday is 0.35

(a) Complete the probability tree diagram.



(2)

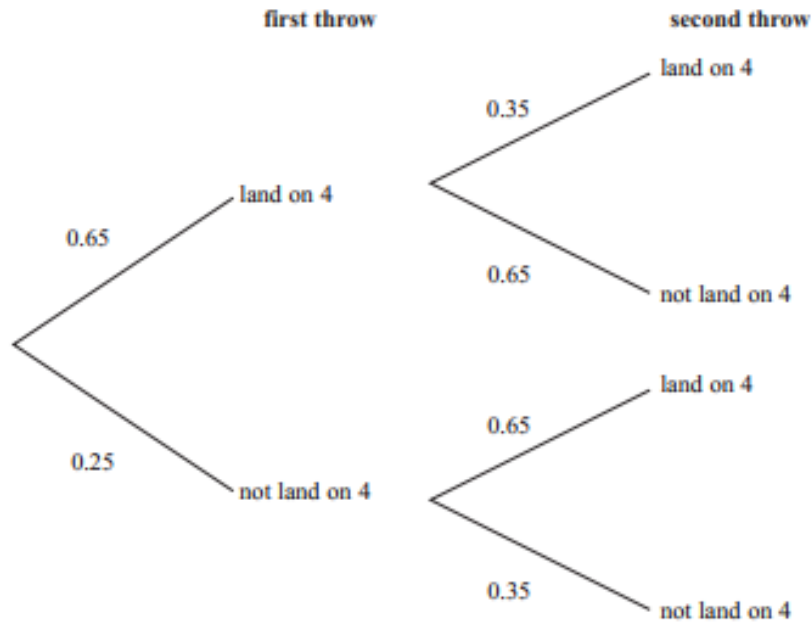
(b) Find the probability that the team will win exactly one of the two matches.

(3)

(Total for Question 15 is 5 marks)

- 4 When a biased 6-sided dice is thrown once, the probability that it will land on 4 is 0.65  
The biased dice is thrown twice.

Amir draws this probability tree diagram.  
The diagram is **not** correct.



Write down **two** things that are wrong with the probability tree diagram.

1.....

.....

2.....

.....

(Total for Question 4 is 2 marks)

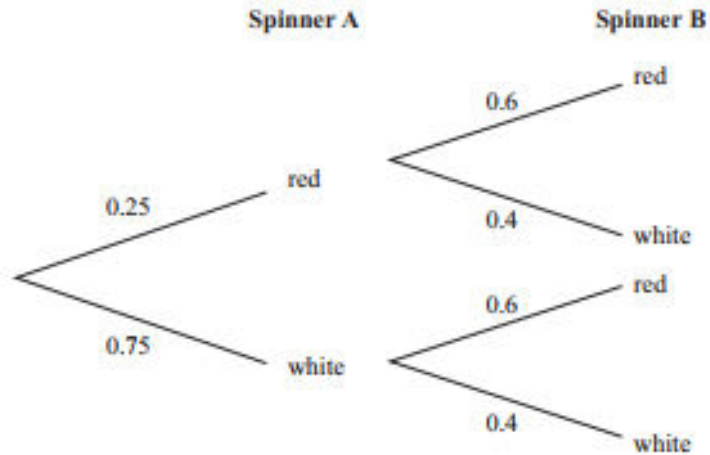
Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Higher Tier

5.

- 12 Alan has two spinners, spinner A and spinner B.  
Each spinner can land on only red or white.

The probability that spinner A will land on red is 0.25  
The probability that spinner B will land on red is 0.6

The probability tree diagram shows this information.



Alan spins spinner A once and he spins spinner B once.  
He does this a number of times.

The number of times **both** spinners land on red is 24

Work out an estimate for the number of times **both** spinners land on white.

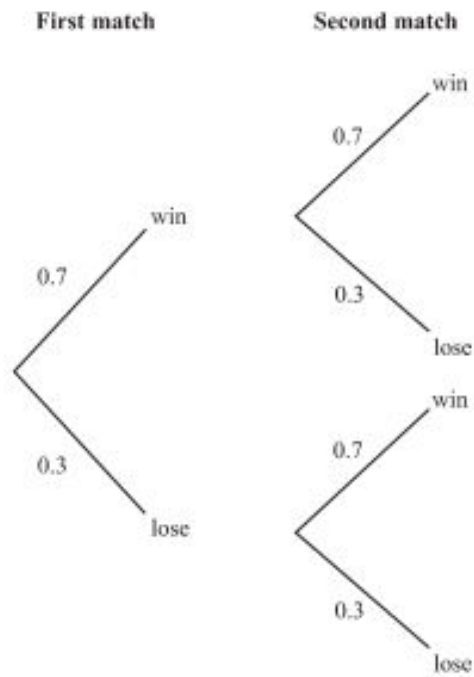
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(Total for Question 12 is 3 marks)



11 Finlay plays two tennis matches.

The probability that he will win a match and the probability that he will lose a match are shown in the probability tree diagram.



(a) Work out the probability that Finlay wins both matches.

.....  
(2)

(b) Work out the probability that Finlay loses at least one match.

.....  
(2)

.....  
**(Total for Question 11 is 4 marks)**  
.....

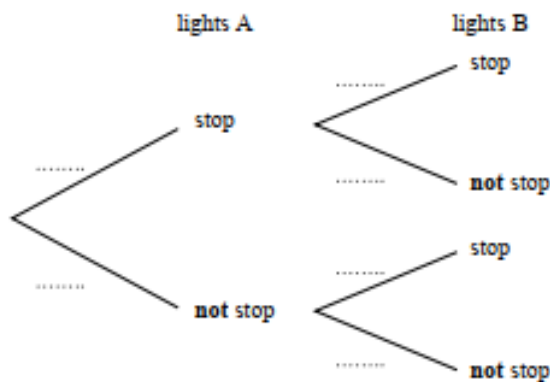
12 A and B are two sets of traffic lights on a road.

The probability that a car is stopped by lights A is 0.4

If a car is stopped by lights A, then the probability that the car is **not** stopped by lights B is 0.7

If a car is **not** stopped by lights A, then the probability that the car is **not** stopped by lights B is 0.2

(a) Complete the probability tree diagram for this information.



(2)

Mark drove along this road.

He was stopped by just one of the sets of traffic lights.

(b) Is it more likely that he was stopped by lights A or by lights B?  
You must show your working.

(3)

**(Total for Question 12 is 5 marks)**

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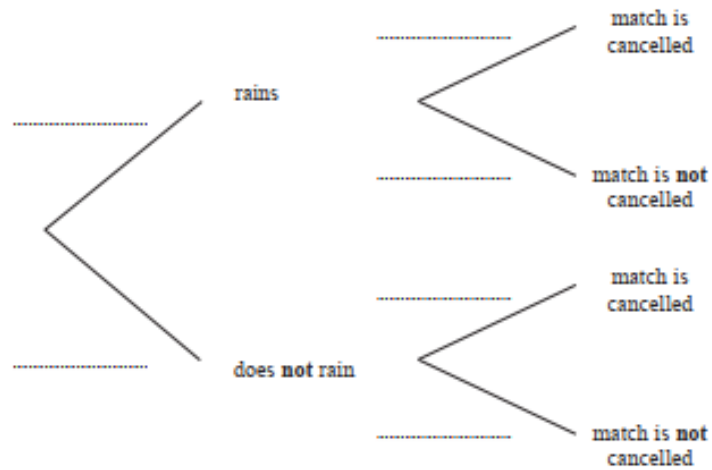


21 The probability that it will rain on a day in June is 0.2

When it rains the probability that my tennis match is cancelled is 0.7

When it does **not** rain, the probability that my tennis match is **not** cancelled is 0.95

(a) Complete the probability tree diagram for this information.



(3)

(b) Work out the probability that, on a day in June, it does **not** rain and my tennis match is cancelled.

(2)

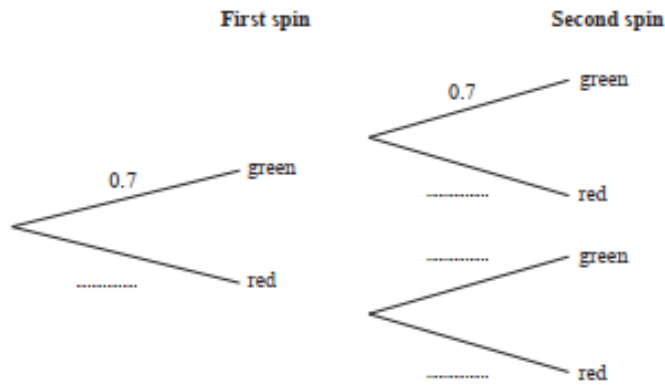
(Total for Question 21 is 5 marks)

19 Louise makes a spinner.

The spinner can land on green or on red.  
The probability that the spinner will land on green is 0.7

Louise spins the spinner twice.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that the spinner lands on two different colours.

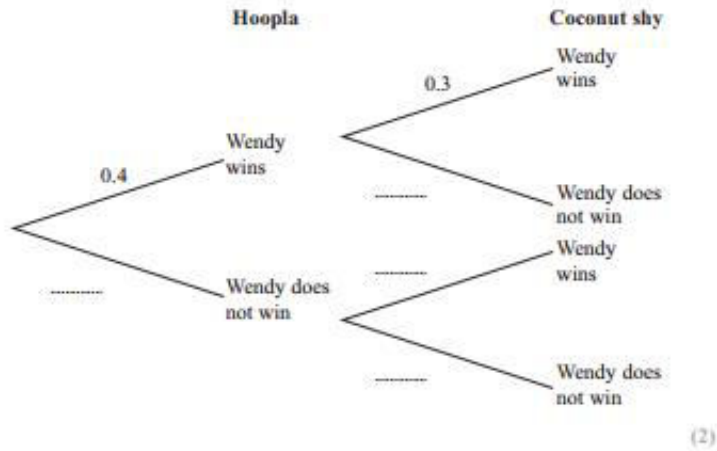
.....  
(3)

.....  
(Total for Question 19 is 5 marks)



- 19 Wendy goes to a fun fair.  
 She has one go at Hoopla.  
 She has one go on the Coconut shy.  
 The probability that she wins at Hoopla is 0.4  
 The probability that she wins on the Coconut shy is 0.3

(a) Complete the probability tree diagram.



- (b) Work out the probability that Wendy wins at Hoopla and also wins on the Coconut shy.

.....  
 (2)

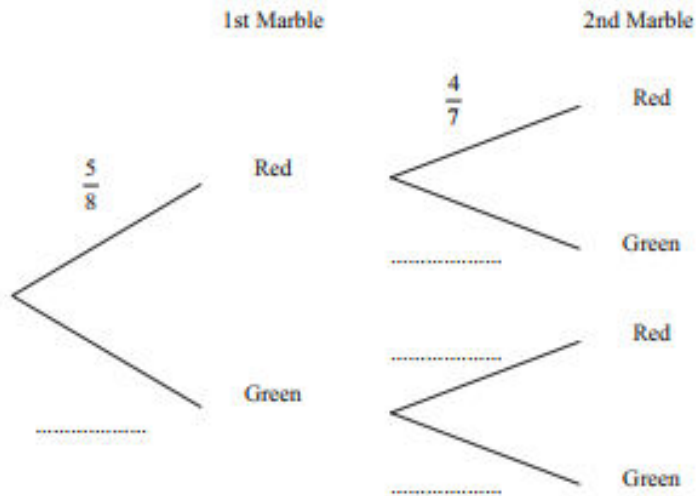
(Total for Question 19 is 4 marks)

18. There are only red marbles and green marbles in a bag.  
There are 5 red marbles and 3 green marbles.

Dwayne takes at random a marble from the bag.  
He does not put the marble back in the bag.

Dwayne takes at random a second marble from the bag.

- (a) Complete the probability tree diagram.



(2)

- (b) Work out the probability that Dwayne takes marbles of different colours.

.....  
(3)

(Total 5 marks)

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22. Jan has two boxes.

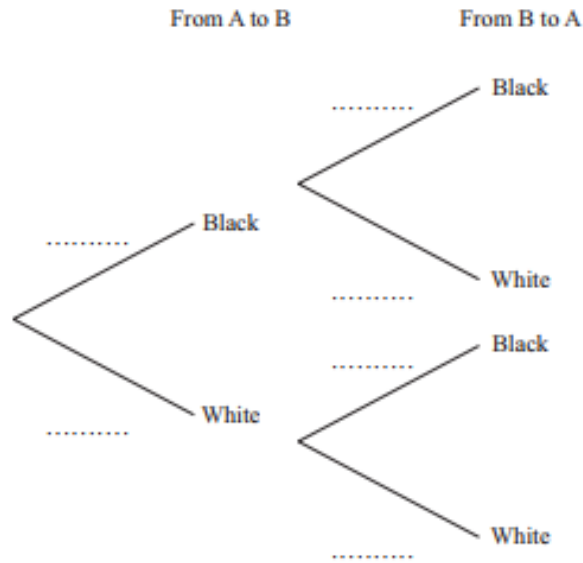
There are 6 black and 4 white counters in box A.

There are 7 black and 3 white counters in box B.

Jan takes at random a counter from box A and puts it in box B.

She then takes at random a counter from box B and puts it in box A.

(a) Complete the probability tree diagram.



(2)

(b) Find the probability that after Jan has put the counter from box B into box A there will still be 6 black counters and 4 white counters in box A.

(4)

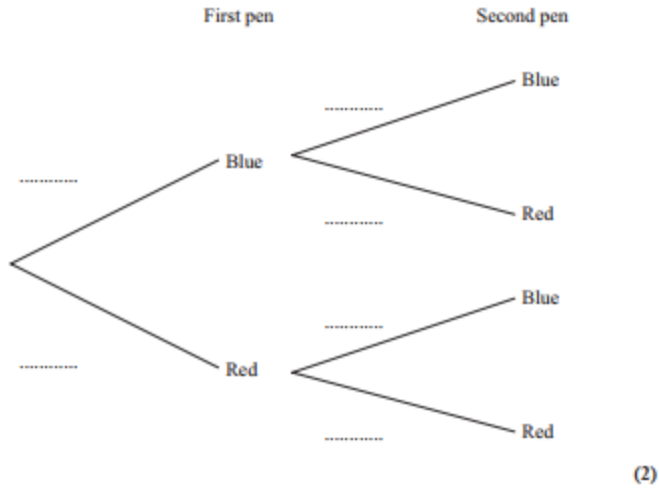
(Total 6 marks)

19. Emma has 7 pens in a box.  
 5 of the pens are blue.  
 2 of the pens are red.

Emma takes at random a pen from the box and writes down its colour.  
 Emma puts the pen back in the box.

Then Emma takes at random a second pen from the box, and writes down its colour.

- (a) Complete the probability tree diagram.



- (b) Work out the probability that Emma takes exactly one pen of each colour from the box.

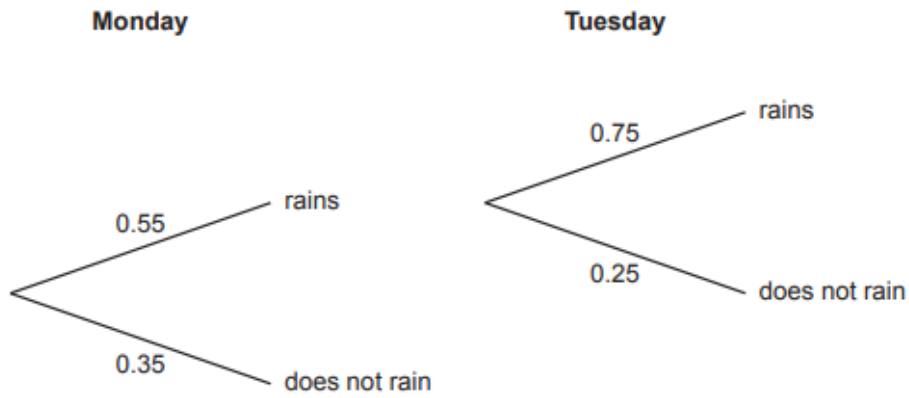
.....  
 (3)

(Total 5 marks)

8 A weather forecast says

- the probability that it will rain on Monday is 0.55
- and
- the probability that it will rain on Tuesday is 0.25.

Ella draws a tree diagram to show this information.



Write down three errors that Ella has made with her tree diagram.

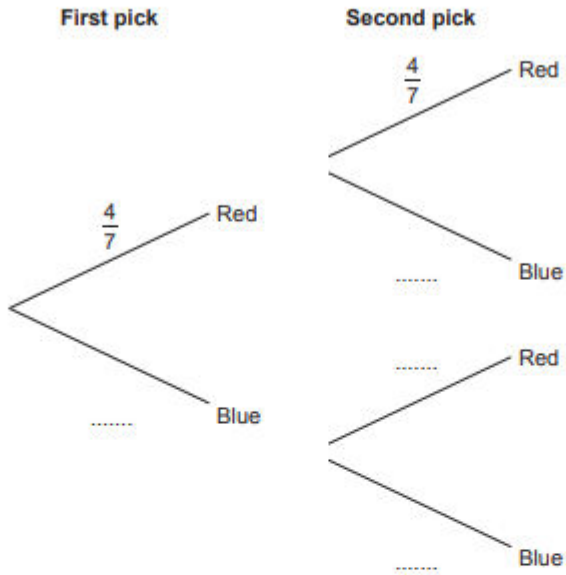
- 1 .....
  - 2 .....
  - 3 .....
- ..... [3]



17.

- 6 A bag contains 4 red counters and 3 blue counters only.  
Jack picks a counter at random and then replaces it.  
Jack then picks a second counter at random.

(a) Complete the tree diagram.



[2]

- (b) Work out the probability that Jack picks two red counters.

(b) ..... [2]

OCR GSCE – Monday 12 November 2018 – Paper 6 (Calculator) Higher Tier

18.

- 7 The probability that any postcard posted in Portugal on Monday is delivered to the UK within a week is 0.62.  
The probability that any postcard posted in Portugal on Friday is delivered to the UK within a week is 0.41.

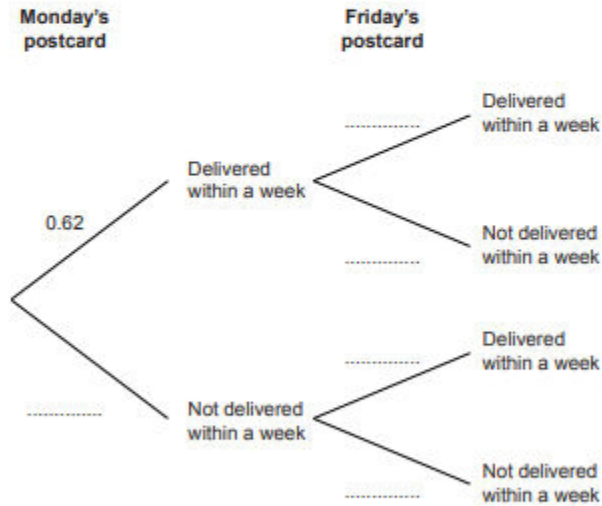
- (a) Anna is on holiday in Portugal.  
She posts 15 postcards to the UK on Monday.

How many of her postcards can she expect to be delivered within a week?

(a) ..... [2]

- (b) Sergio is in Portugal.  
He posts one postcard to the UK on Monday.  
He posts another postcard to the UK on Friday.

(i) Complete the probability tree to show the possible outcomes for the postcards.



[2]

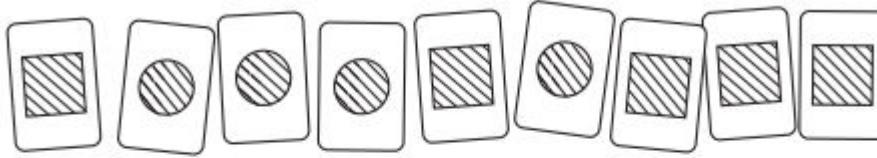
- (ii) Calculate the probability that only one of Sergio's postcards is delivered within a week.

(b)(ii) ..... [3]

Turn over

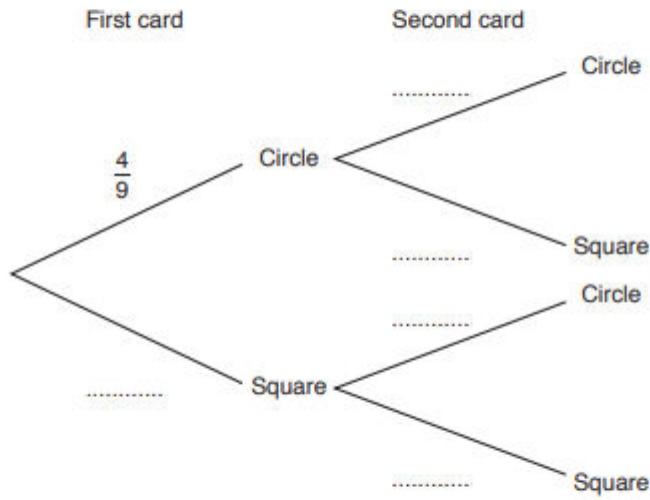
19.

11 Reuben is playing a matching game with these cards.



He turns the cards over and shuffles them.  
 Reuben takes a card and keeps it. He then takes a second card.  
 If the cards are different, he wins the game.

(a) Complete this tree diagram to show the probabilities for each card picked in the game.



[2]

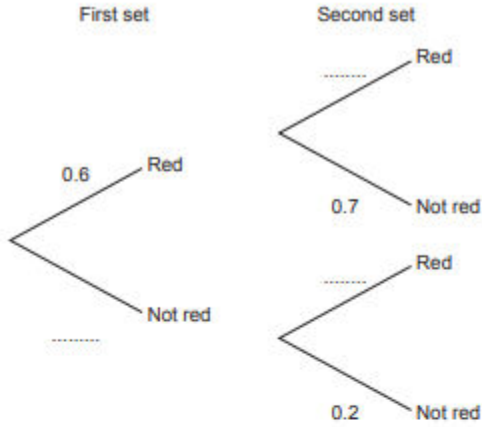
(b) What is the probability that Reuben wins the game?

(b) ..... [3]

OCR GCSE – Thursday 25 May 2017 – Paper 4 (Calculator) Higher Tier

20.

- 13 Rashid drives his car along a road passing through two sets of traffic lights. The tree diagram shows the probabilities of the lights being **red** when he reaches them.



(a) Complete the tree diagram. [1]

(b) Write down the probability that the first set is **not red**.  
 (b) ..... [1]

(c) Given that the first set is **red**, write down the probability that the second set is **not red**.  
 (c) ..... [1]

(d) Work out the probability that both sets are **not red**.  
 (d) ..... [2]

(e) Work out the probability that at least one set is **not red**.  
 (e) ..... [3]

AQA GCSE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier

21.

6 Anna plays a game with an ordinary, fair dice.

If she rolls 1 she wins.

If she rolls 2 or 3 she loses.

If she rolls 4, 5 or 6 she rolls again.

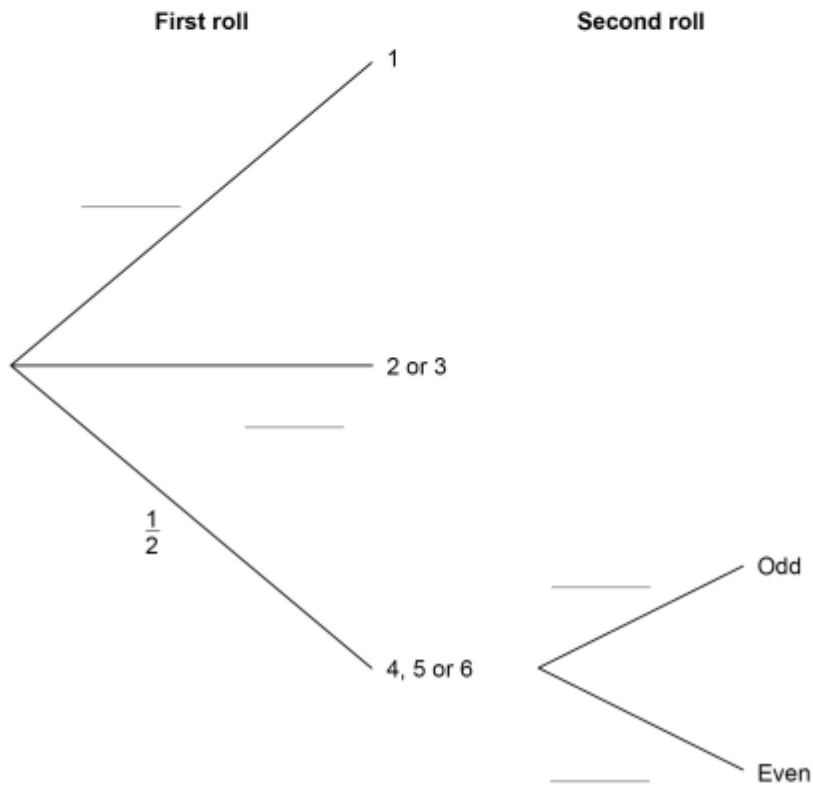
When she has to roll again,

if she rolls an odd number she wins

if she rolls an even number she loses.

6 (a) Complete the tree diagram with the four missing probabilities.

[2 marks]



- 6 (b) Is Anna more likely to win or to lose?  
You **must** work out the probability that she wins.

**[4 marks]**

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11 (c) Work out the probability that **exactly one** of the dice lands on a number less than 3  
[2 marks]

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Answer

AQA GCSE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

23.





AQA GCSE – Sample Paper 1 (Non - Calculator) Higher Tier

24.

- 20 On Friday, Greg takes part in a long jump competition.  
He has to jump at least 7.5 metres to qualify for the final on Saturday.
- He has up to three jumps to qualify.
  - If he jumps at least 7.5 metres he does **not** jump again on Friday.

Each time Greg jumps, the probability he jumps at least 7.5 metres is 0.8  
Assume each jump is independent.

- 20 (a) Complete the tree diagram.

[2 marks]

First jump

Second jump

Third jump



- 20 (b) Work out the probability that he does **not** need the third jump to qualify.

[2 marks]

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Answer \_\_\_\_\_