

Tree Diagrams

Question Paper 2

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Topic	Handling Data Statistics
Sub Topic	Tree Diagrams(Probability)
Booklet	Question Paper 2

Time Allowed: 59 minutes

Score: /49

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

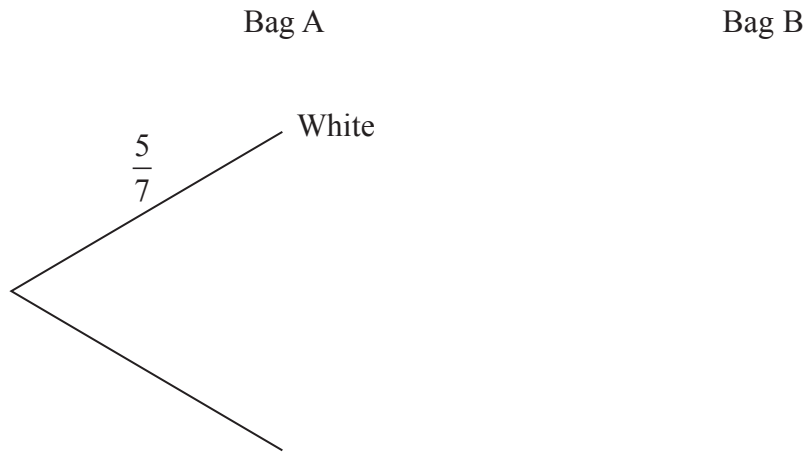
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- 1 Maria has two bags.
In bag A, there are 5 white counters and 2 red counters.
In bag B, there are 3 white counters and 2 red counters.

Maria is going to take at random one counter from bag A and one counter from bag B.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that both counters will be white.

.....
(2)

(c) Work out the probability that exactly one of the counters will be white.

.....
(3)

(Total for Question 1 is 7 marks)

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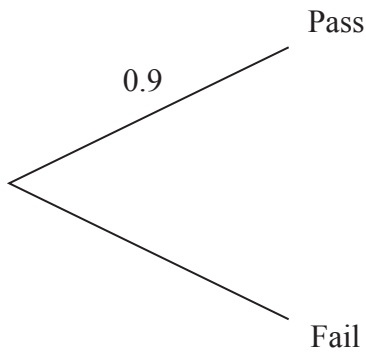
2 Chris and Sunil each take a driving test.

The probability that Chris passes the driving test is 0.9

The probability that Sunil passes the driving test is 0.65

(a) Complete the probability tree diagram.

Chris



(3)

(b) Work out the probability that exactly one of Chris or Sunil passes the driving test.

.....
(3)

(Total for Question 2 is 6 marks)

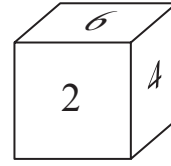
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4 Leonidas has a fair dice.

He throws the dice twice.

(a) Work out the probability that he gets the number 5 both times.



(2)

Alicia has a fair dice.

She throws the dice 3 times.

(b) Work out the probability that she gets the number 5 exactly once.

(3)

(Total for Question 4 is 5 marks)

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5 Two bags contain discs.

Bag **A** contains 12 discs.

5 of the discs are red, 6 are blue and 1 is white.

Bag **B** contains 25 discs.

n of the discs are red and the rest are blue.

James takes at random a disc from Bag **A**.

Lucy takes at random a disc from Bag **B**.

Given that the probability that James and Lucy both take a red disc is $\frac{2}{15}$

(i) find the value of n , the number of red discs in Bag **B**.

$n = \dots\dots\dots$

(ii) Hence calculate the probability that James and Lucy take discs of different colours.

(Total for Question 5 is 5 marks)

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- 6 When a fair dice is thrown the probability of scoring 6 is $\frac{1}{6}$
Arun throws four fair dice.

Work out the probability that he scores 6 with at least one of the four dice.

.....

(Total for Question 6 is 3 marks)

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7 Peter travels to work either by bus or by bike.

The probability that Peter will travel to work by bus on any one day is 0.7

Whenever Peter travels to work by bus, the probability that he will be late is 0.1

Whenever Peter travels to work by bike, the probability that he will be late is 0.05

Peter is going to go to work on Monday and on Tuesday.

Work out the probability that he will be late for work on at least one of these days.

(Total for Question 7 is 5 marks)

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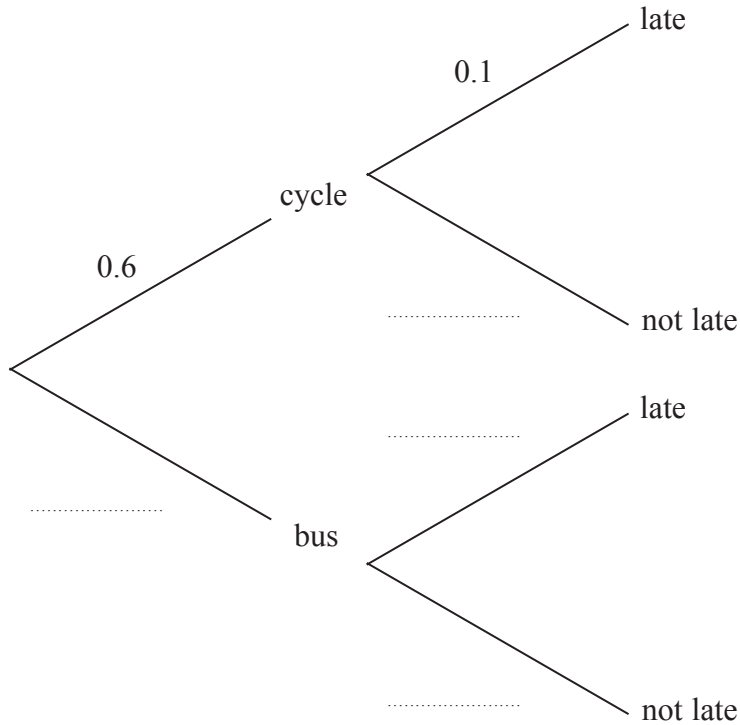
8 Chaiwat either cycles to work or goes by bus.

On any day that he goes to work, the probability that he cycles is 0.6

When he cycles, the probability that he is late is 0.1

When he goes by bus, the probability that he is late is 0.3

(a) Complete the probability tree diagram.



(2)

(b) Calculate the probability that on a day Chaiwat goes to work, he cycles and is late for work.

.....
(2)

(c) Calculate the probability that on a day Chaiwat goes to work, he is **not** late for work.

.....
(3)

(Total for Question 8 is 7 marks)

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9 Linford and Alan race against each other in a competition.

If one of them wins a race, he wins the competition.

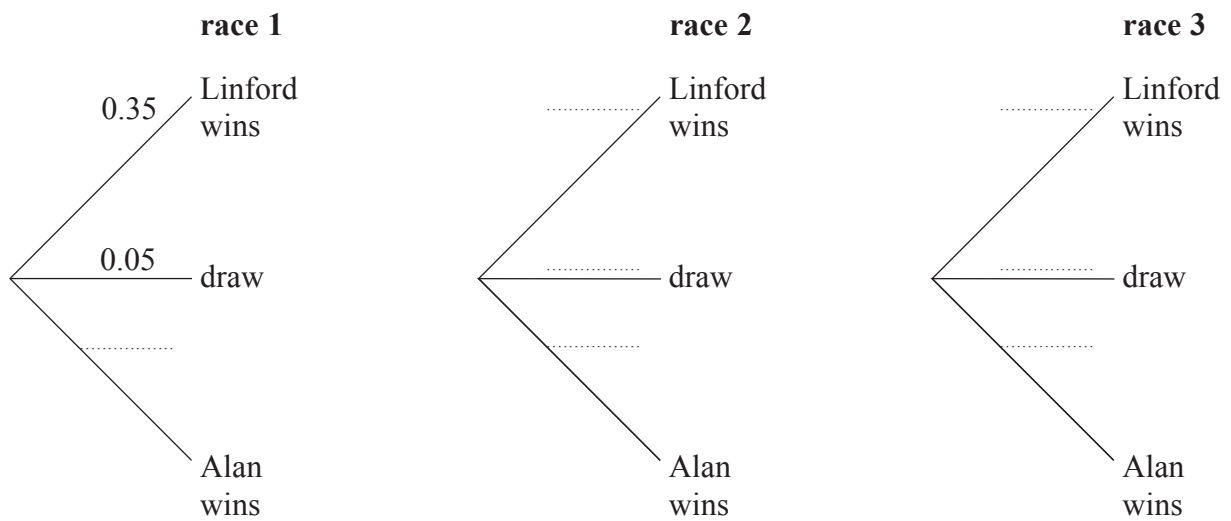
If the race is a draw, they run another race.

They run a maximum of three races.

Each time they race, the probability that Linford wins is 0.35

Each time they race, the probability that there is a draw is 0.05

(a) Complete the probability tree diagram.



(2)

(b) Calculate the probability that Linford wins the competition.

.....
(3)

(Total for Question 9 is 5 marks)