



Aberdare Community School
Mathematics Department

WJEC GCSE
Higher – Calculator
Data

Tree diagrams

Name:

Set:

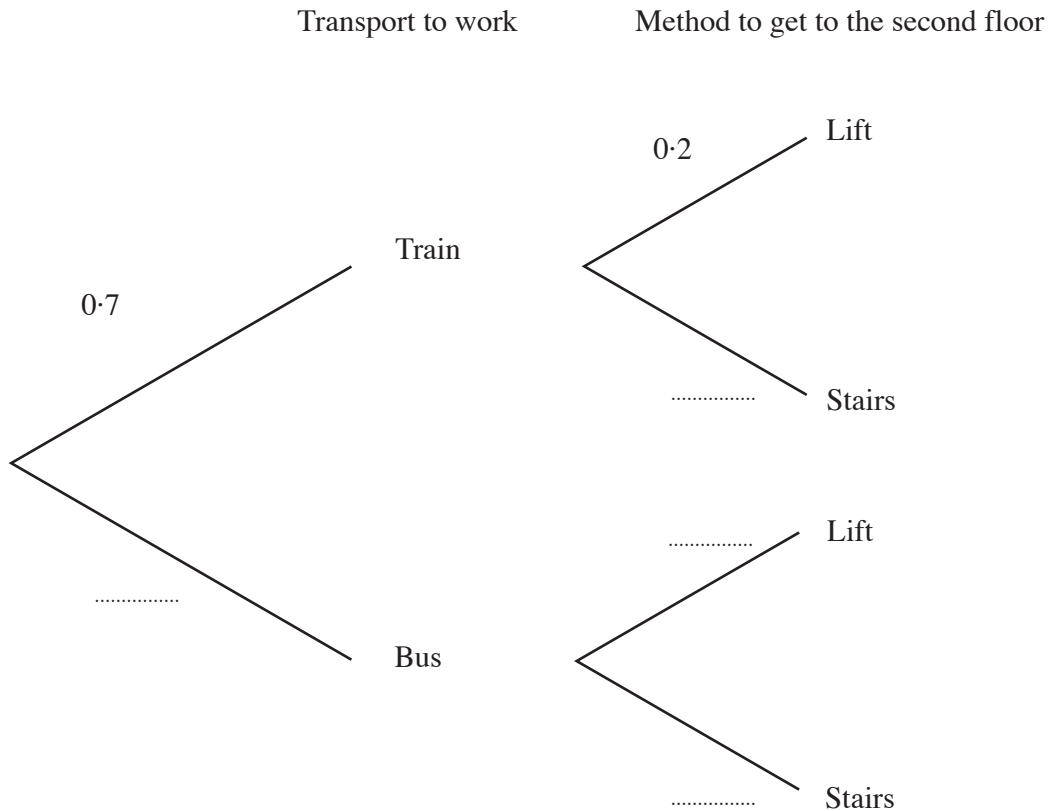
Date:

Teacher:

13. Jayne works in a second floor office, she can either take the train or bus to work. The probability that she takes the train to work is 0.7. When Jayne arrives at the office building where she works she can either use the stairs or the lift to the second floor. The probability that she uses the lift is 0.2.

(a) Complete the following tree diagram.

[2]



- (b) Calculate the probability that Jayne takes the train to work and uses the stairs to get to her office.

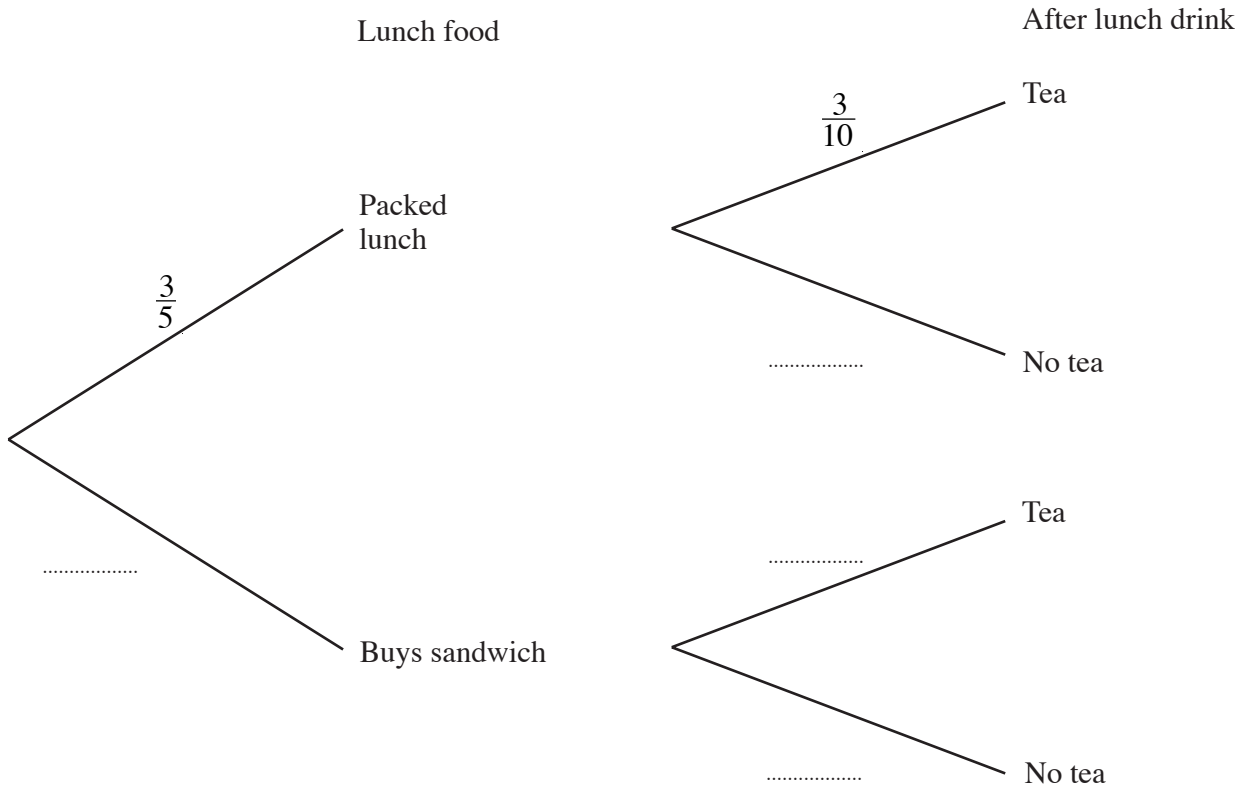
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[2]

10. Each lunchtime Paul either eats a packed lunch or he eats a sandwich bought in the snack bar. The probability that he eats a packed lunch is $\frac{3}{5}$. Whatever he eats for lunch the probability that he buys a mug of tea is $\frac{3}{10}$.

(a) Complete the following tree diagram.



[2]

(b) Calculate the probability that Paul eats a packed lunch and he buys a mug of tea.

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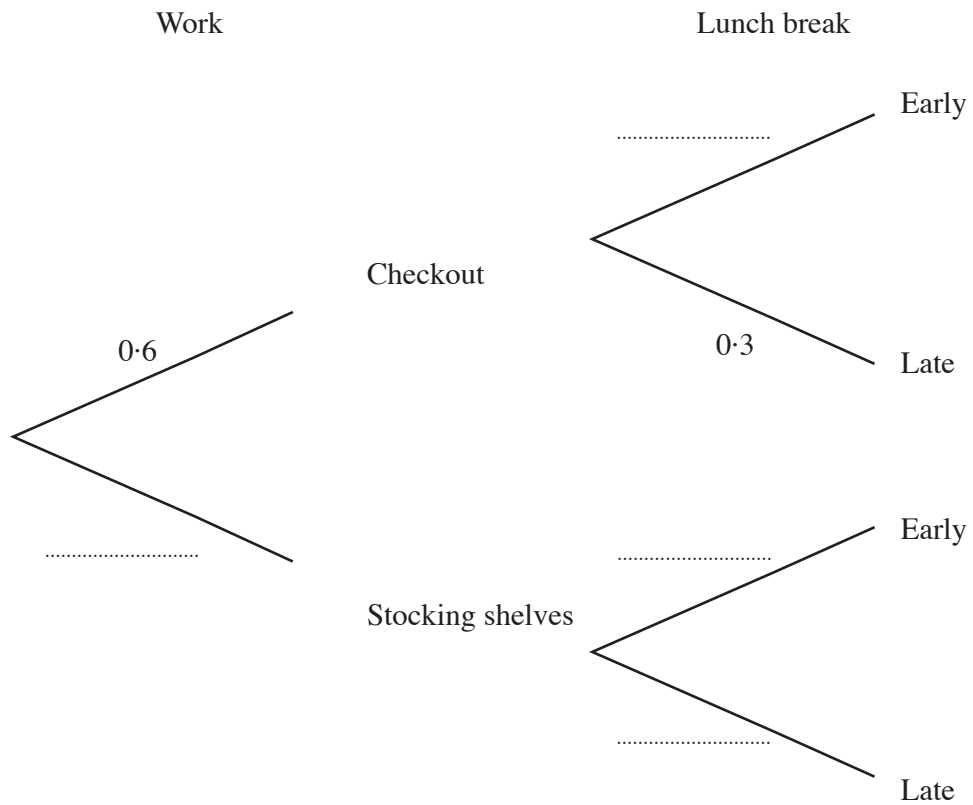
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[2]

10. Graham is employed in a shop where he either works on the checkout or stocks shelves. The probability that he works on the checkout is 0.6. When Graham arrives at work he is told whether he has either an early lunch break or a late lunch break. The probability that he is given a late lunch break is 0.3. The type of work done and the time of the lunch break are independent events.

(a) Complete the following tree diagram.



[2]

- (b) Calculate the probability that Graham works on the checkout and has a late lunch break.

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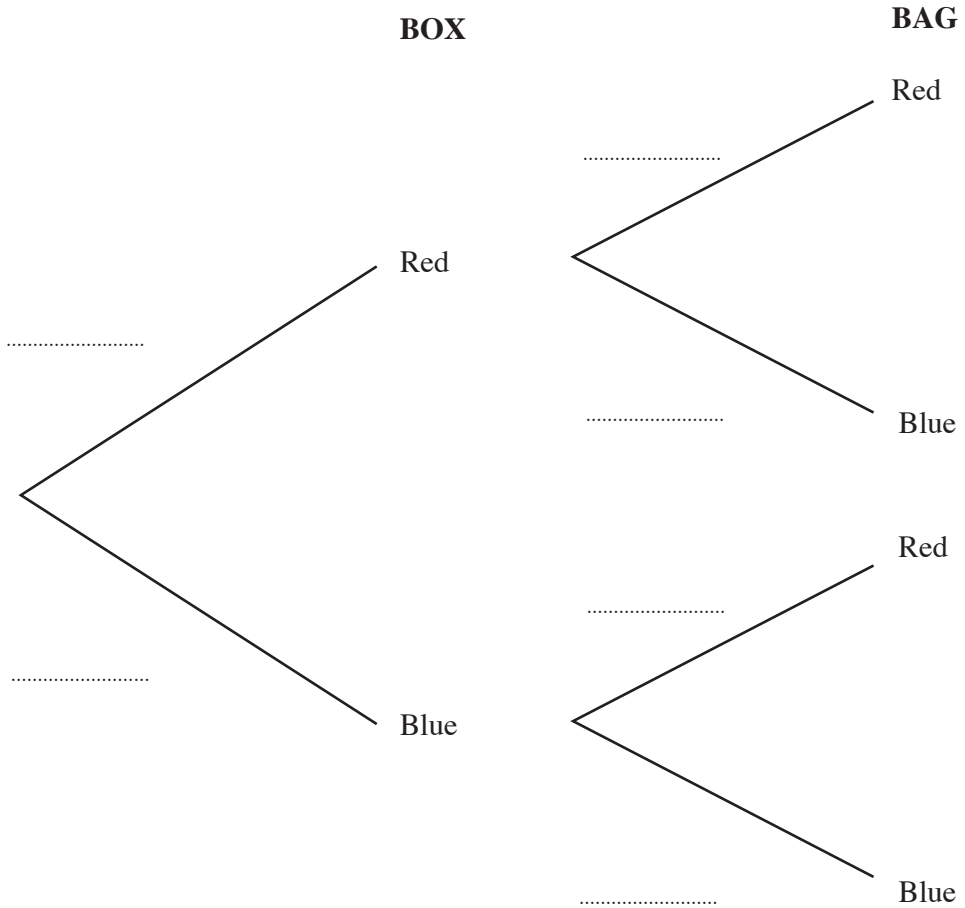
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[2]

12. A box contains two red balls and one blue ball. A bag contains seven red balls and one blue ball. One ball is selected at random from the box and another ball is selected at random from the bag.

(a) Complete the following tree diagram.



[3]

(b) Calculate the probability that the balls selected are different colours.

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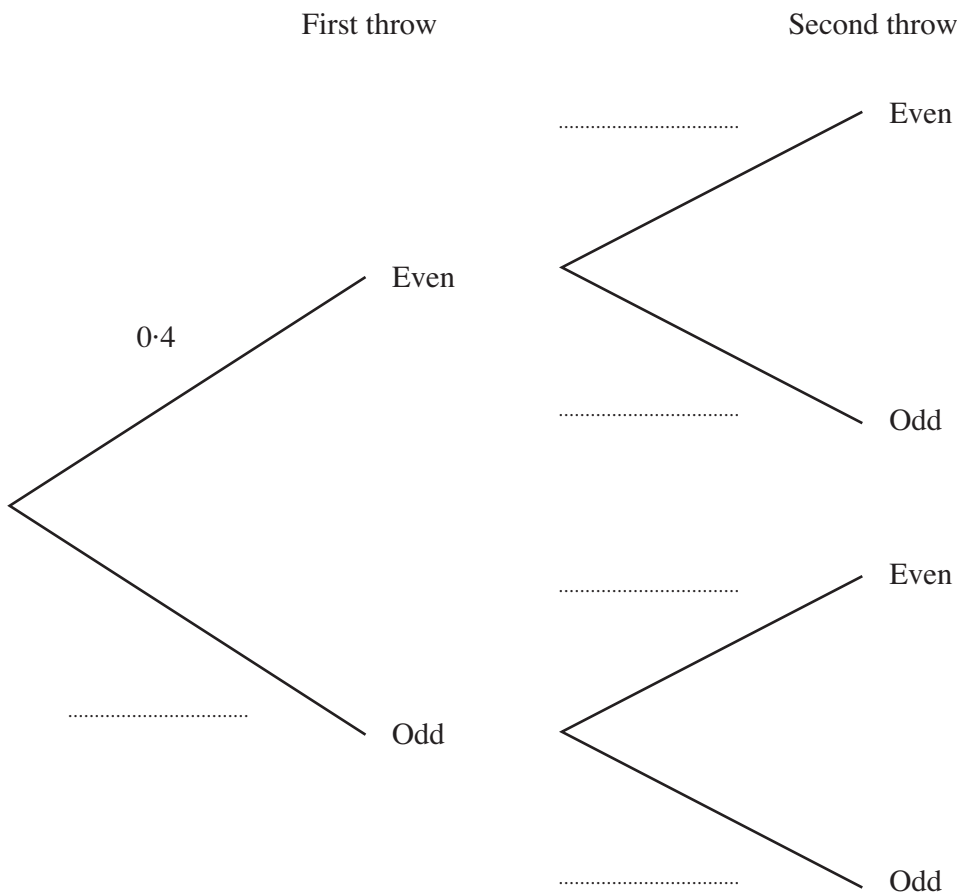
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[3]

10. Each time Robert throws a biased dice, the probability that he throws an even number is 0.4 . Robert throws this biased dice twice.

(a) Complete the following probability tree diagram.



[2]

(b) Robert's score is the sum of the two numbers thrown. Calculate the probability that Robert's score is even.

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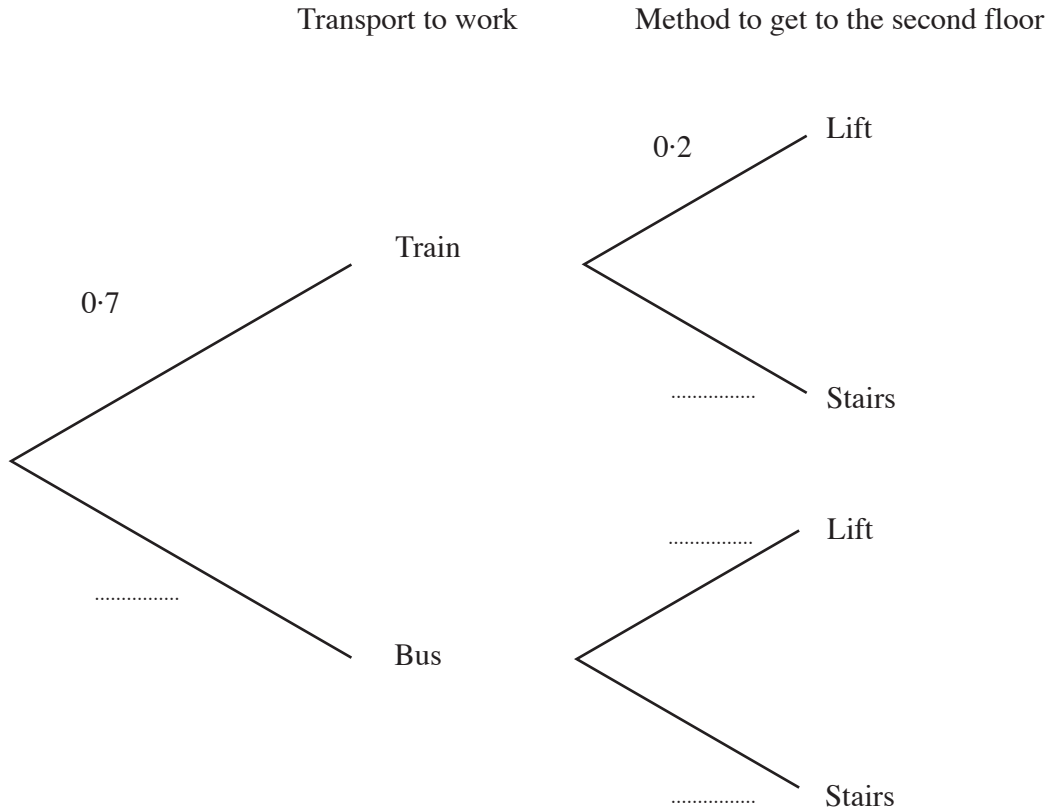
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[3]

13. Jayne works in a second floor office, she can either take the train or bus to work. The probability that she takes the train to work is 0.7. When Jayne arrives at the office building where she works she can either use the stairs or the lift to the second floor. The probability that she uses the lift is 0.2.

(a) Complete the following tree diagram.

[2]



- (b) Calculate the probability that Jayne takes the train to work and uses the stairs to get to her office.

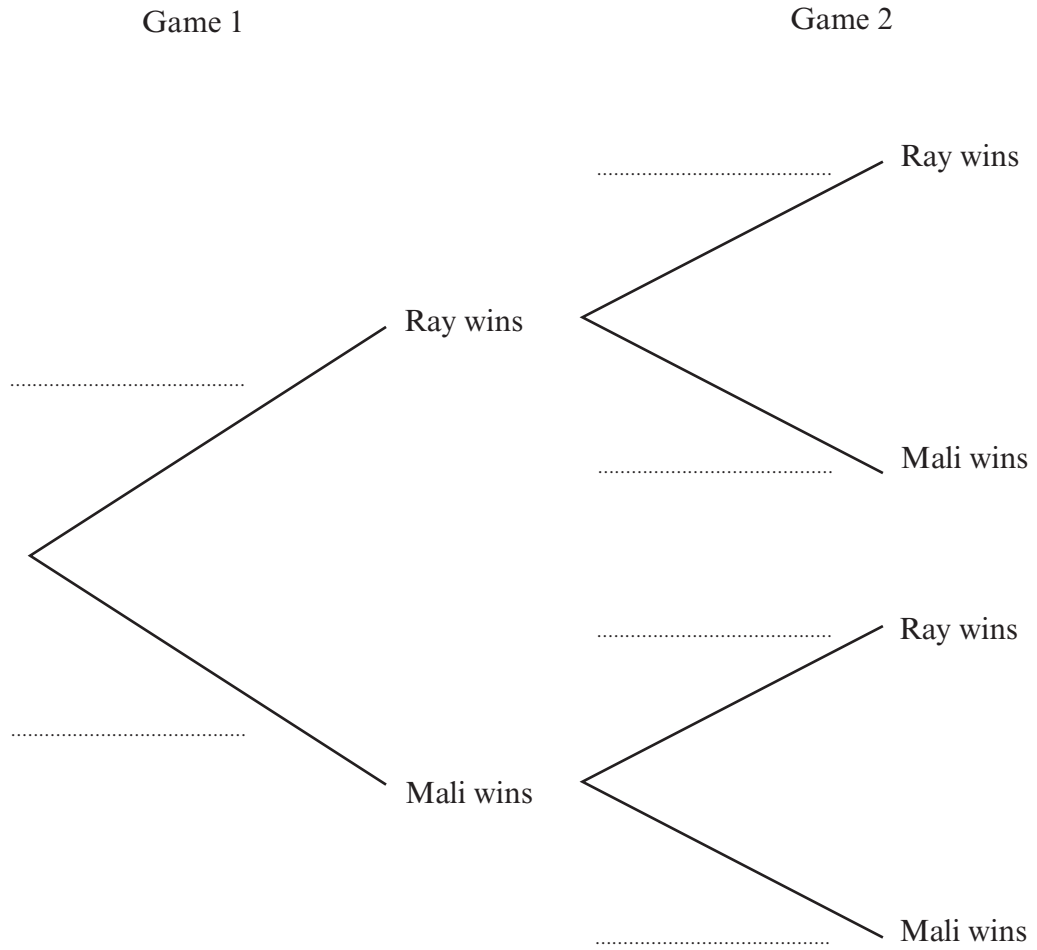
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[2]

13. Whenever Ray and Mali play a game of table tennis the probability that Ray wins is 0.4.
No game of table tennis ends in a draw.

(a) Complete the following tree diagram to show the probabilities of what can happen when Ray and Mali play two games of table tennis.



[2]

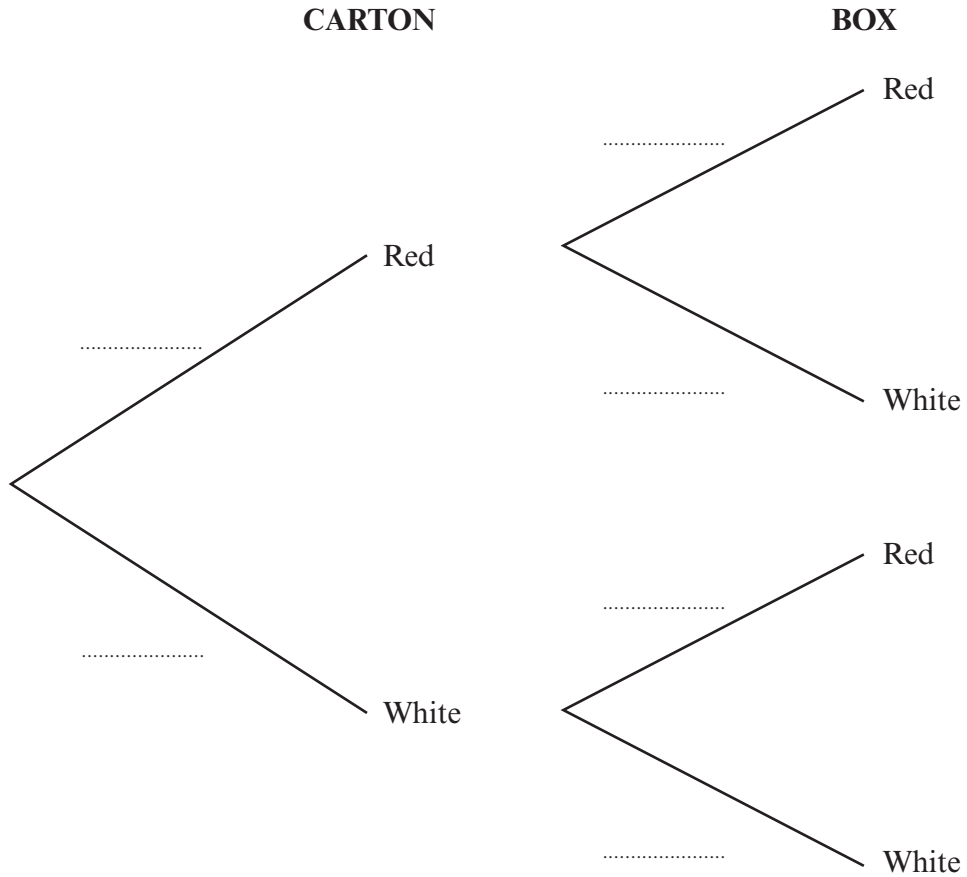
(b) Calculate the probability that Mali wins exactly one game.

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[3]

11. A carton contains three red tins and two white tins of paint.
A box contains seven red tins and three white tins of paint.
One tin of paint is selected at random from the carton and another tin is selected at random from the box.

(a) Complete the following tree diagram.



[3]

(b) Calculate the probability that the tins of paint selected are both white.

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[2]

(c) Calculate the probability that the tins of paint selected are different colours.

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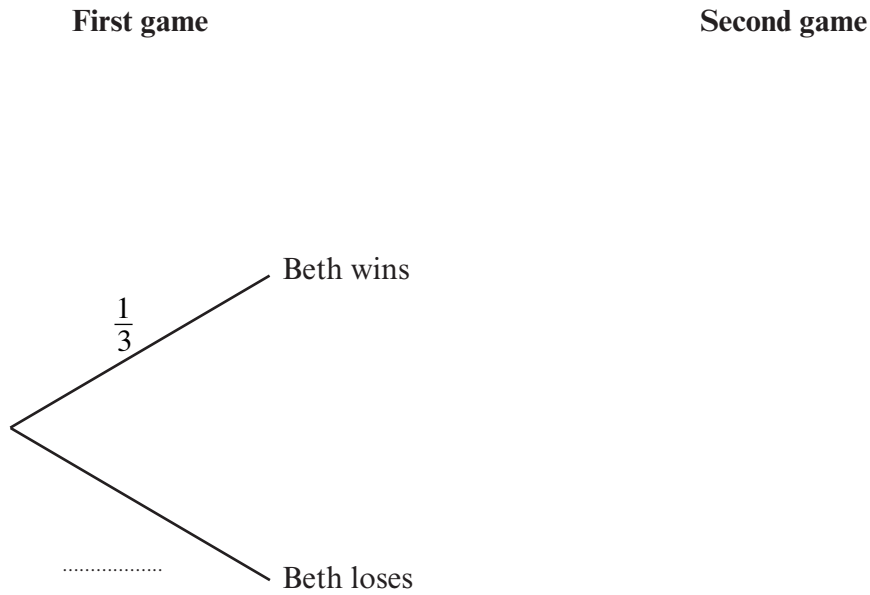
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[3]

10. Whenever Beth plays a game of pool against Zainab, the probability that she wins the game is $\frac{1}{3}$.

Beth plays **two** games of pool against Zainab.

(a) Complete the following tree diagram to show the probabilities of what can happen when Beth plays **two** games of pool against Zainab.



[3]

(b) Calculate the probability that Beth wins both games against Zainab.

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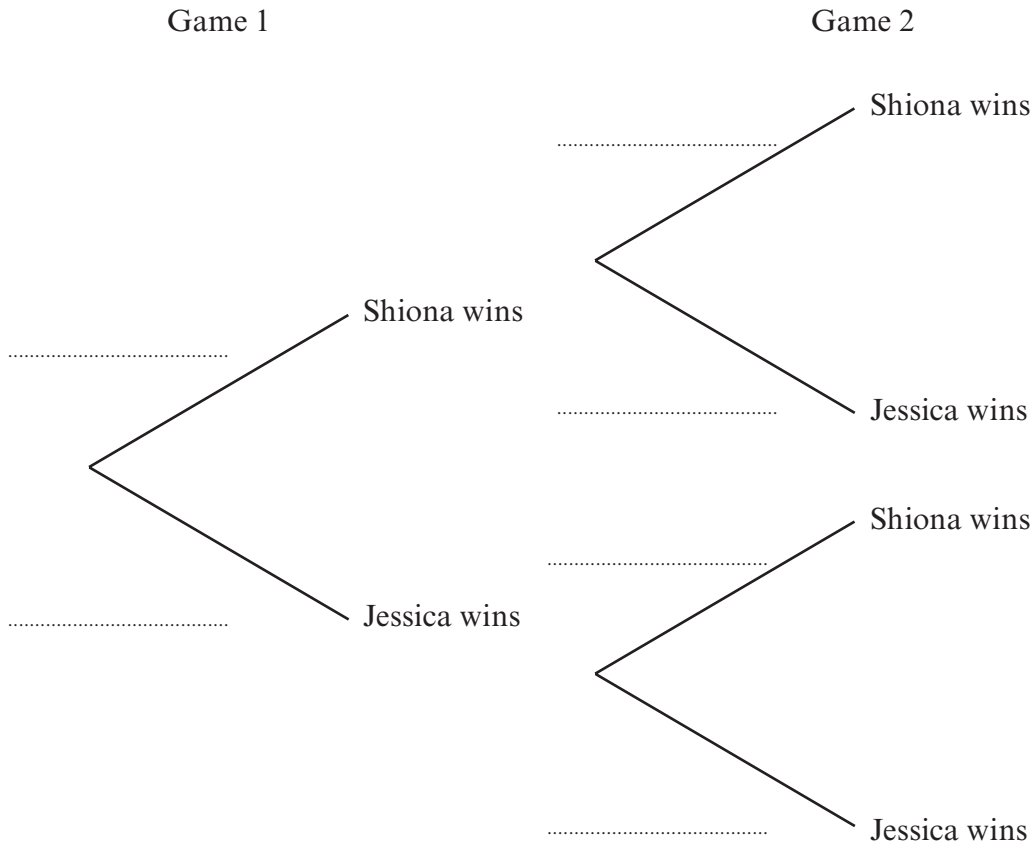
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[2]



10. Whenever Shiona and Jessica play a game of 'Jewels' the probability that Shiona wins is 0.3.

(a) Complete the following tree diagram to show the probabilities of what can happen when Shiona and Jessica play two games of 'Jewels'.



[2]

(b) Calculate the probability that Shiona wins exactly one game.

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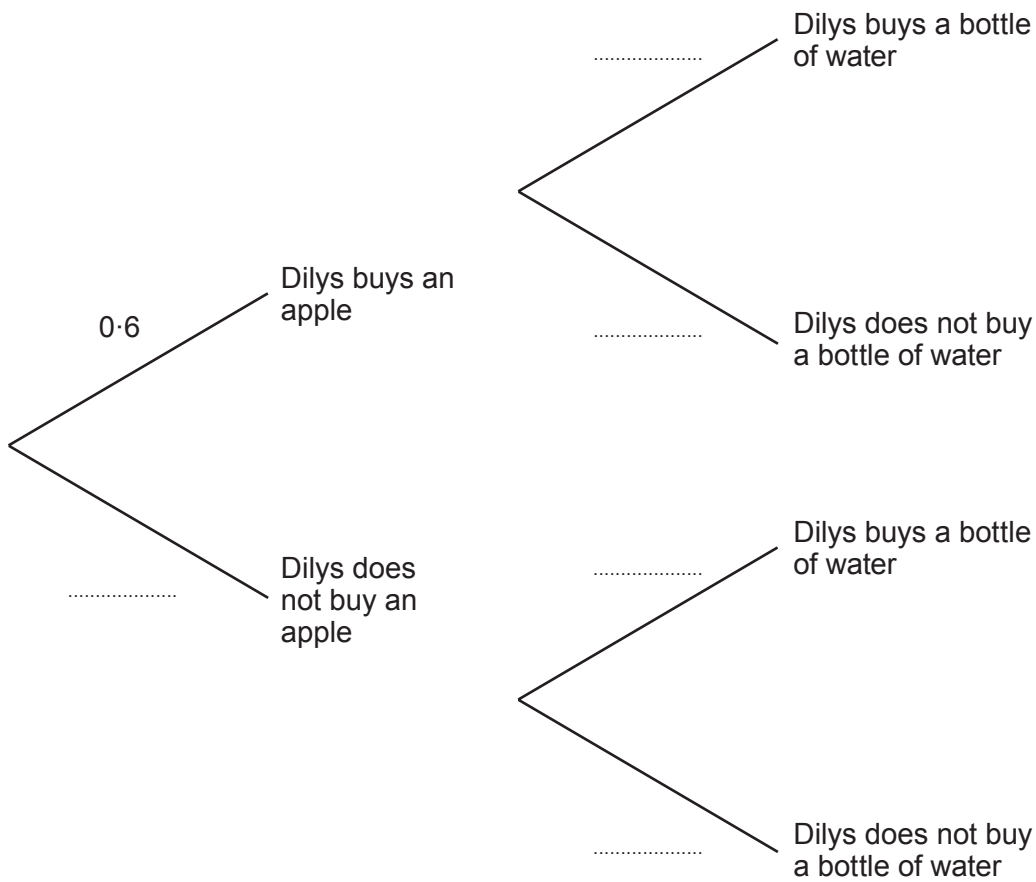
[3]



15. The probability of Dilys buying a bottle of water is independent of her buying an apple. The probability that Dilys buys an apple **and** a bottle of water is 0.18.

(a) Complete the tree diagram.

[4]



(b) Find the probability that Dilys does not buy an apple and does not buy a bottle of water.

[2]

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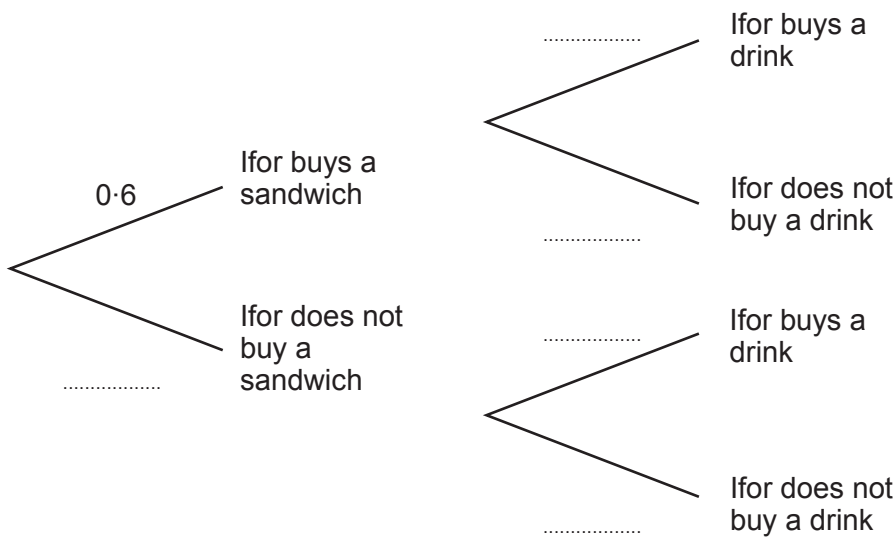
11. The probability that Ifor buys a sandwich for lunch is 0.6.
 The probability that Ifor buys a sandwich and a drink for lunch is 0.18.
 Buying a sandwich for lunch and buying a drink for lunch are independent events.

(a) (i) Find the probability that Ifor buys a drink for lunch. [2]

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Probability that Ifor buys a drink =

(ii) Complete the tree diagram. [2]



(b) Find the probability that Ifor does not buy a sandwich and does not buy a drink at lunchtime. [2]

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