

Name:

Exam Style Questions

Tree Diagrams



Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 252



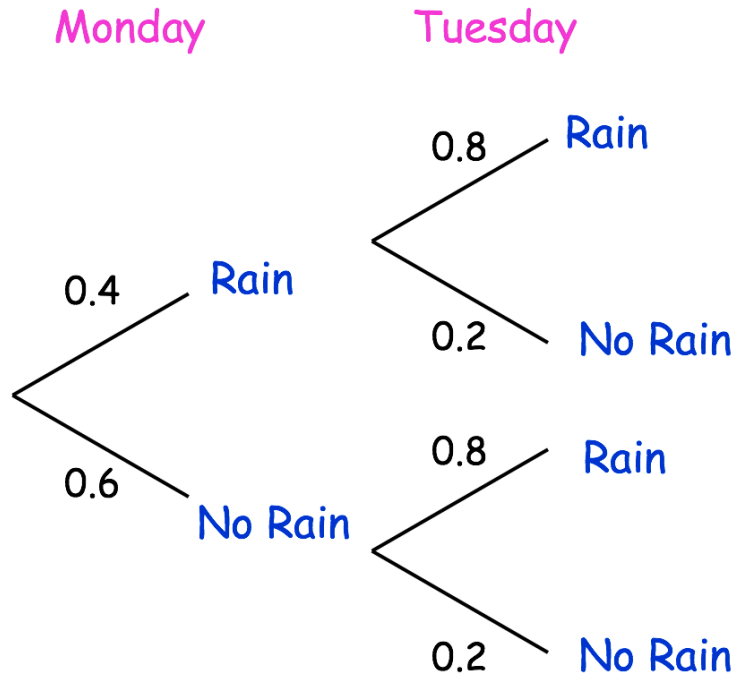
Answers and Video Solutions



1. The probability that it rains on Monday is 0.4
The probability that it rains on Tuesday is 0.8



The probability tree diagram shows this information.



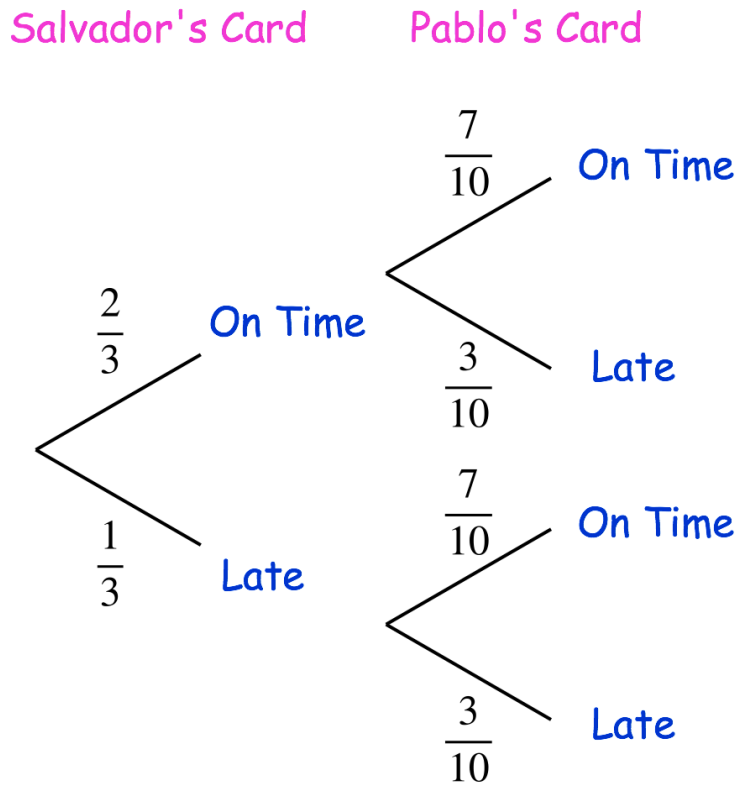
Work out the probability that there will be **no rain** on Monday and **no rain** on Tuesday.

.....
(2)

3. Ross posts a birthday card to Salvador and a birthday card to Pablo.



The probability tree shows the probabilities of each card arriving on time or late.



Work out the probability that both cards arrive **on time**.

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(2)

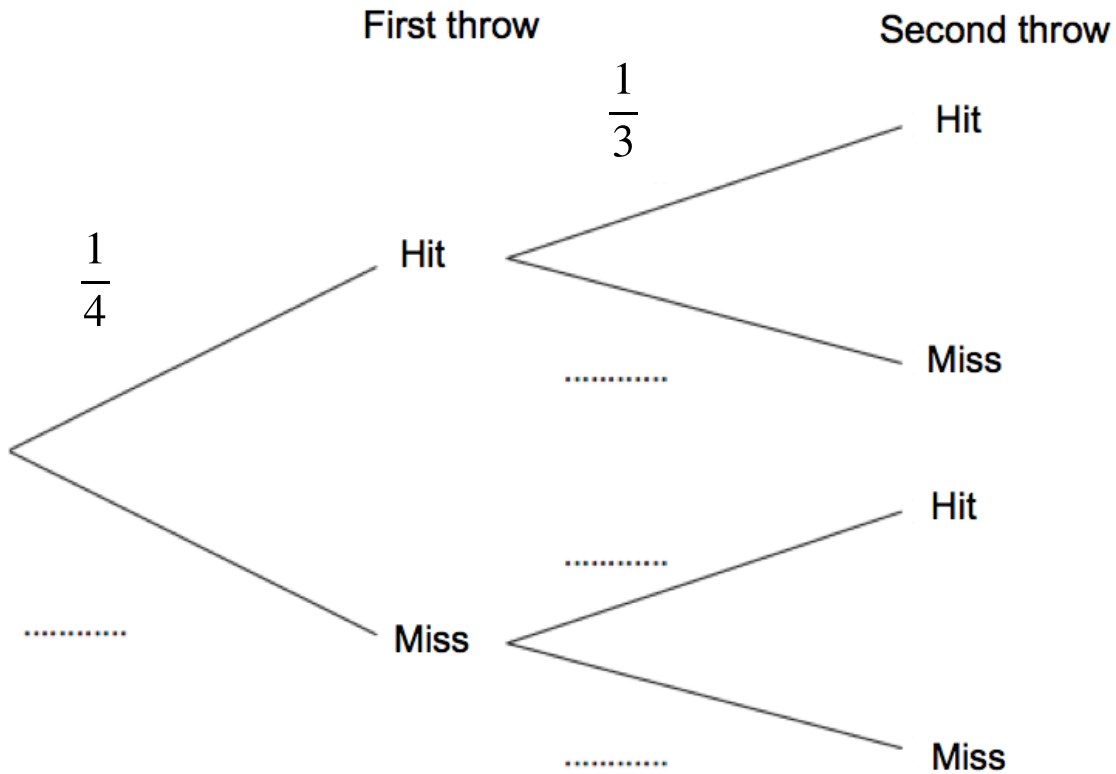
7. Jennifer is playing darts.
She throws two darts aiming for a Bullseye.



The probability Jennifer hits the Bullseye on her first throw is $\frac{1}{4}$

The probability she hits the Bullseye on her second throw is $\frac{1}{3}$

- (a) Complete the tree diagram.



- (b) Work out the probability Jennifer hits the Bullseye at least once.

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(2)

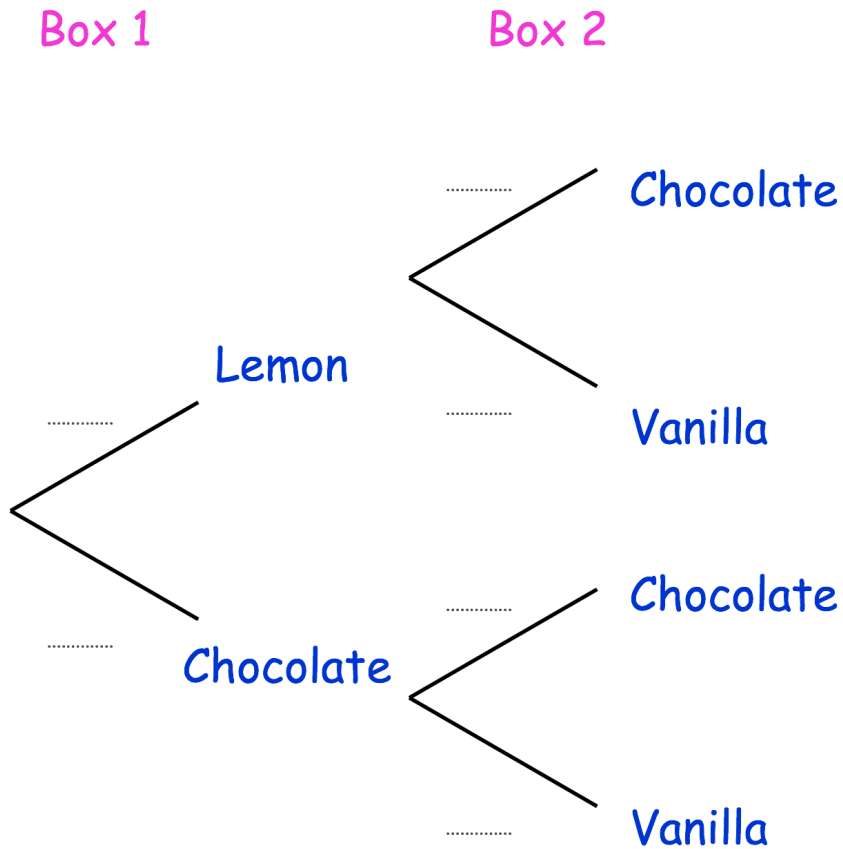
8. Two boxes contain cupcakes



In box 1, there are 2 lemon and 3 chocolate cupcakes.
In box 2, there are 6 chocolate and 5 vanilla cupcakes.

Nafisa picks a cupcake at random from box 1 and then a cupcake at random from box 2.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Nafisa picks exactly one chocolate cupcake.

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(2)

9. In a small village, one bus arrives a day.

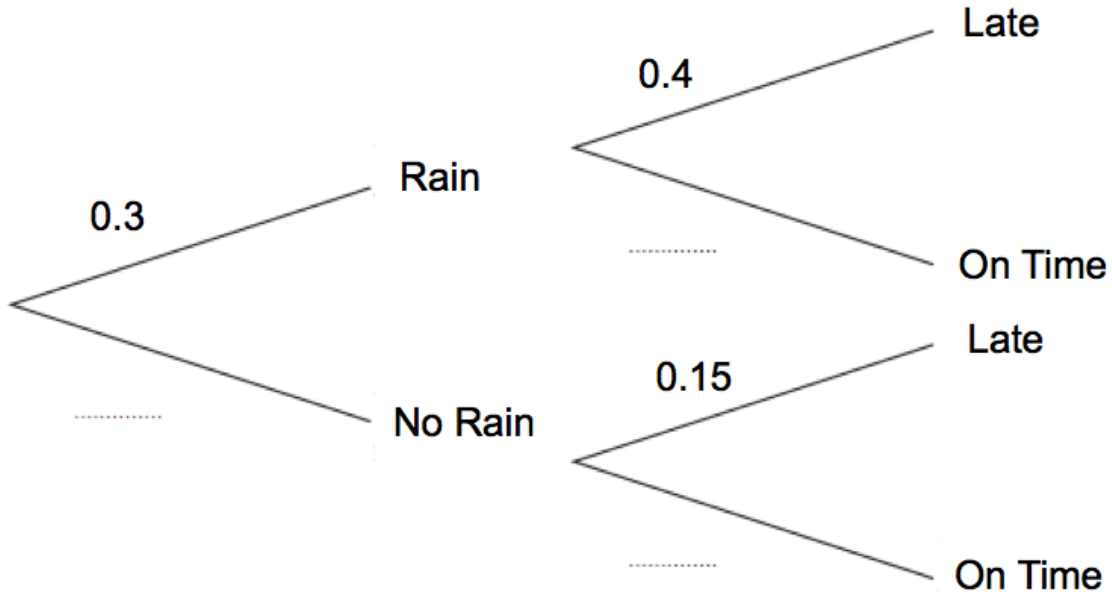


The probability of rain in the village is 0.3.

If it rains, the probability of a bus being late is 0.4.

If it does not rain, the probability of a bus being late is 0.15.

(a) Complete the tree diagram

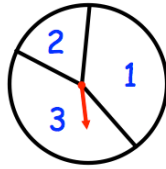


(2)

(b) Work out the number of days the bus should be late over a period of 200 days.

.....
(3)

10. Shown is a spinner.



The probability of a 1 is $2x$

The probability of a 2 is x

The probability of a 3 is $2x$

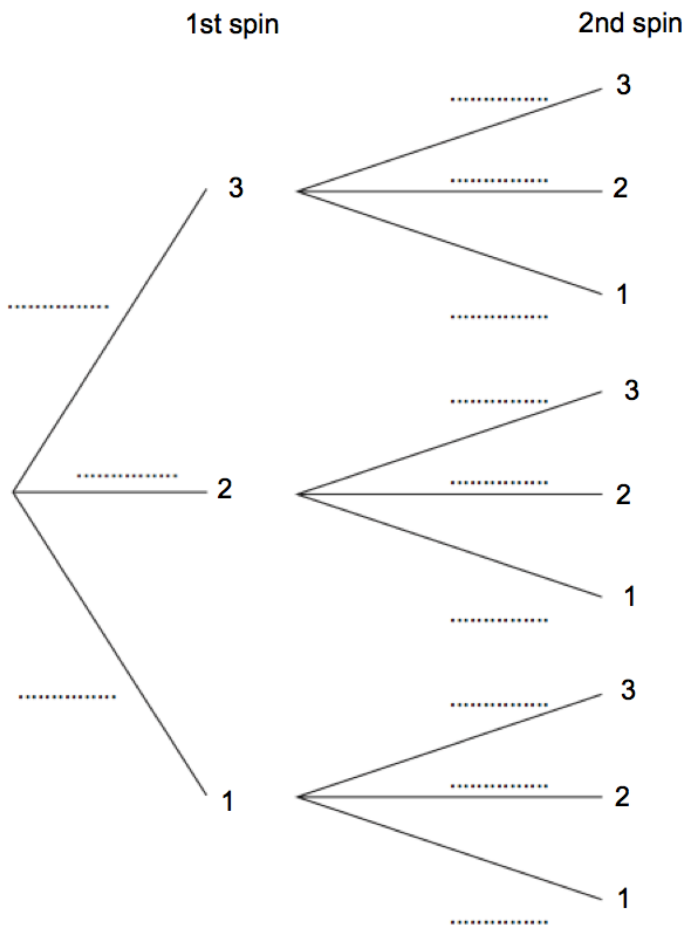
(a) Calculate the value of x .

.....
(2)

The spinner is spun twice and the scores are added together.

(b) Work out the probability of the final score being 4.

You may use the tree diagram to help you.

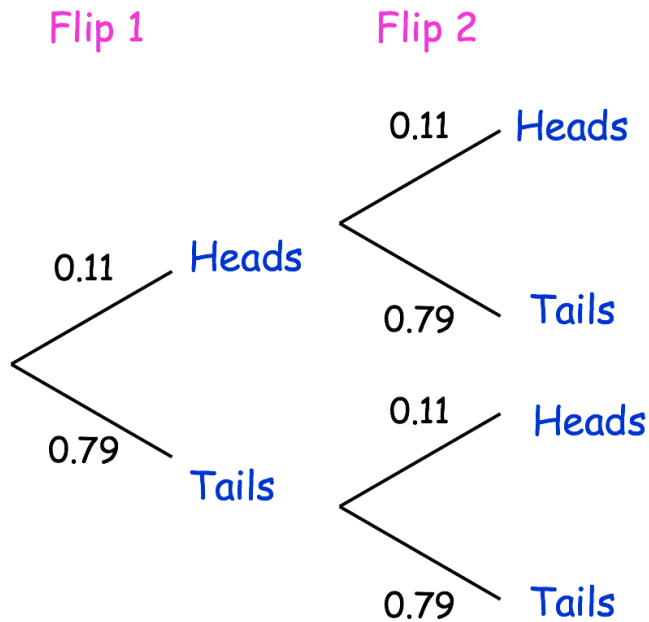


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(4)

11. Alfie has a biased coin.
When flipped, the probability that the coin lands on tails is 0.79



Alfie flips the coin twice and draws this tree diagram.



Give a criticism of Alfie's tree diagram.

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(1)

12. The probability that a train arrives late is 0.2



James is travelling by train on Saturday and Sunday.

(a) Show this information on a probability tree diagram.

(2)

(b) Calculate the probability the train is on time both days.

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(2)

13. A college course consists of 12 weeks of teaching with a final exam at the end of the course.

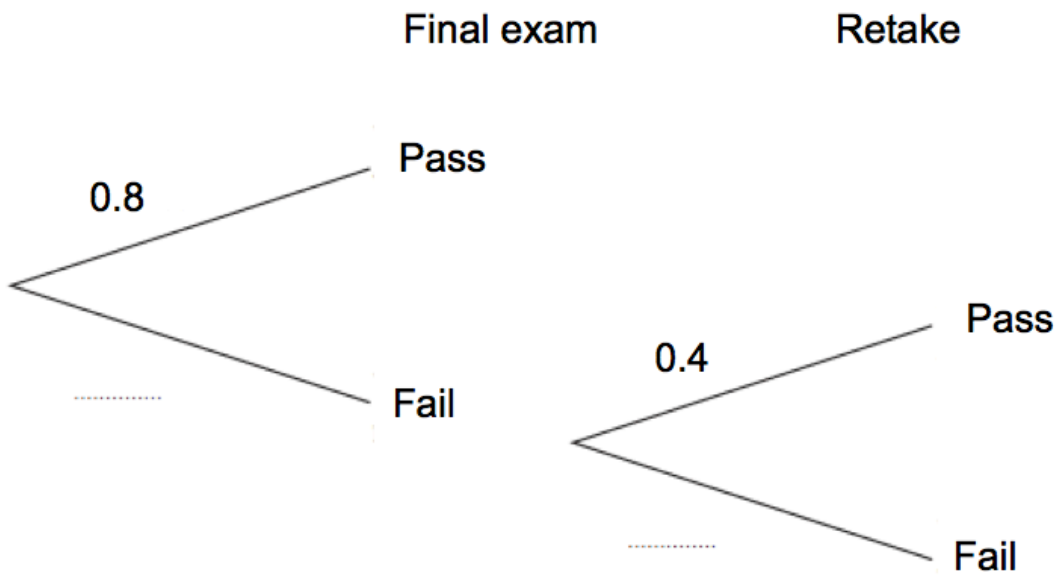


If a student fails the final exam, they have one opportunity to retake the exam.

The probability of a student passing the final exam is 0.8

The probability of a student passing the retake is 0.4

(a) Complete the probability tree diagram.




(2)

If a student passes the final exam or the retake, they receive a certificate.

(b) Work out the probability of a student receiving a certificate.

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(2)

14. Isaac has designed a game to raise money for charity during a school fa
 There are two boxes of counters, box 1 and box 2.
 Each box contains red and green counters.

This two-way table shows the number of each colour in each box.

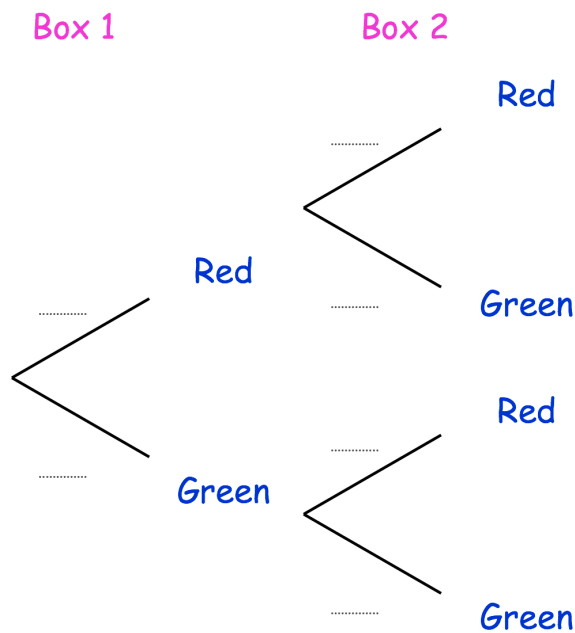
| | Box 1 | Box 2 |
|-------|-------|-------|
| Red | 160 | 50 |
| Green | 40 | 25 |

To play the game, each person selects a counter at random from each box.
 If both counters are green, they win a prize.
 The counters are then returned to their boxes.

It costs £2 to play the game and each prize is worth £8.50

In total, the game is played 180 times.

Work out an estimate of how much money Isaac raised for charity.



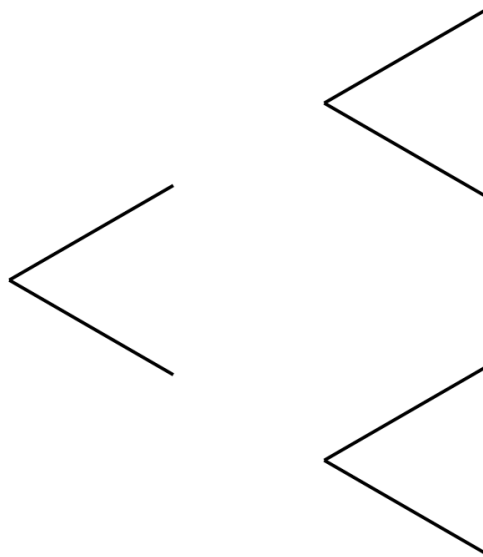
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(6)

16. Kyle takes the free kicks for his local football team.
He takes 70% of the free kicks with his right foot.



Kyle scores 40% of the free kicks that he takes with his right foot.
Overall, Kyle scores 32.5% of the free kicks that he takes.

Work out what percentage of the free kicks, taken with his left foot, that Kyle scores.



.....%
(4)

