Name:

Exam Style Questions

Tree Diagrams

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

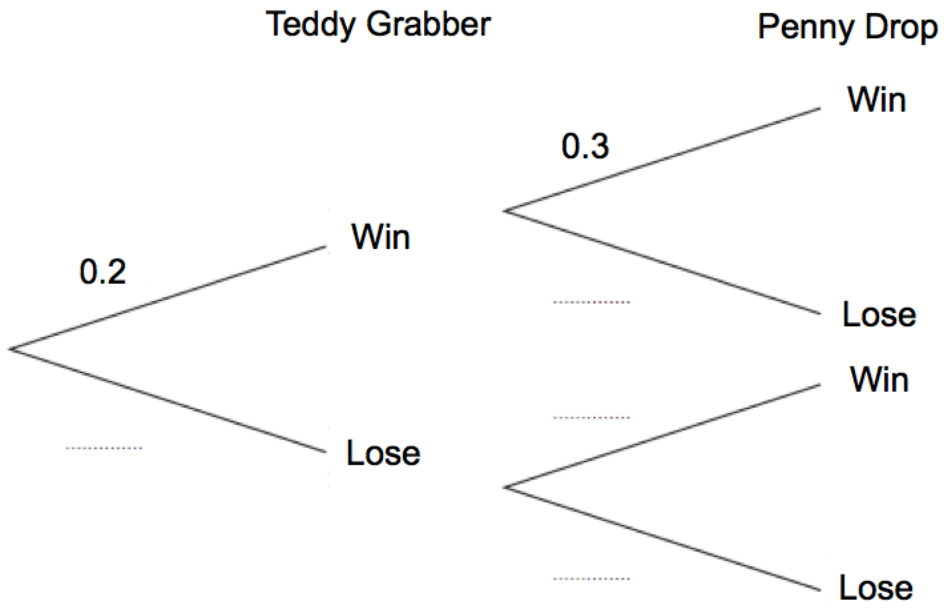
Video 252

1. James goes to an arcade.

He has one go on the Teddy Grabber.
He has one go on the Penny Drop.

The probability that he wins on the Teddy Grabber is 0.2.
The probability that he wins on the Penny Drop is 0.3.

(a) Complete the tree diagram.



(2)

(b) Work out the probability that James wins on the Teddy Grabber and he also wins on the Penny Drop.

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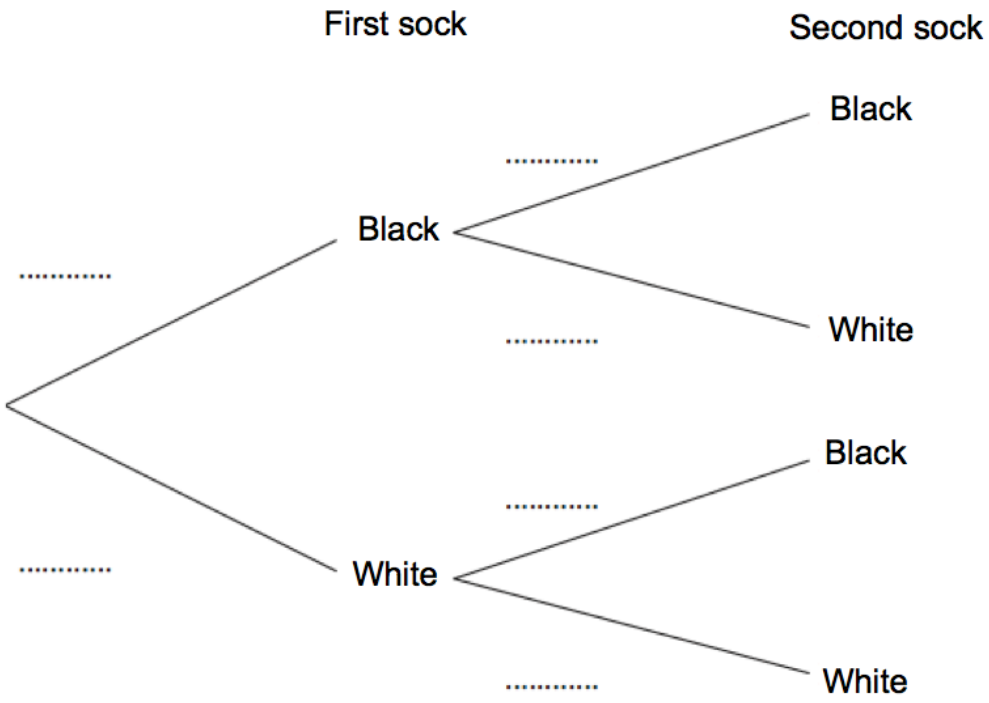
(2)

2. Natalie has 8 socks in a drawer.

5 of the socks are black.
3 of the socks are white.

Natalie takes out a sock at random, writes down its colour and puts it back into the drawer.
Then Natalie takes out a second sock, at random, and writes down its colour.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that the two socks are the same colour.

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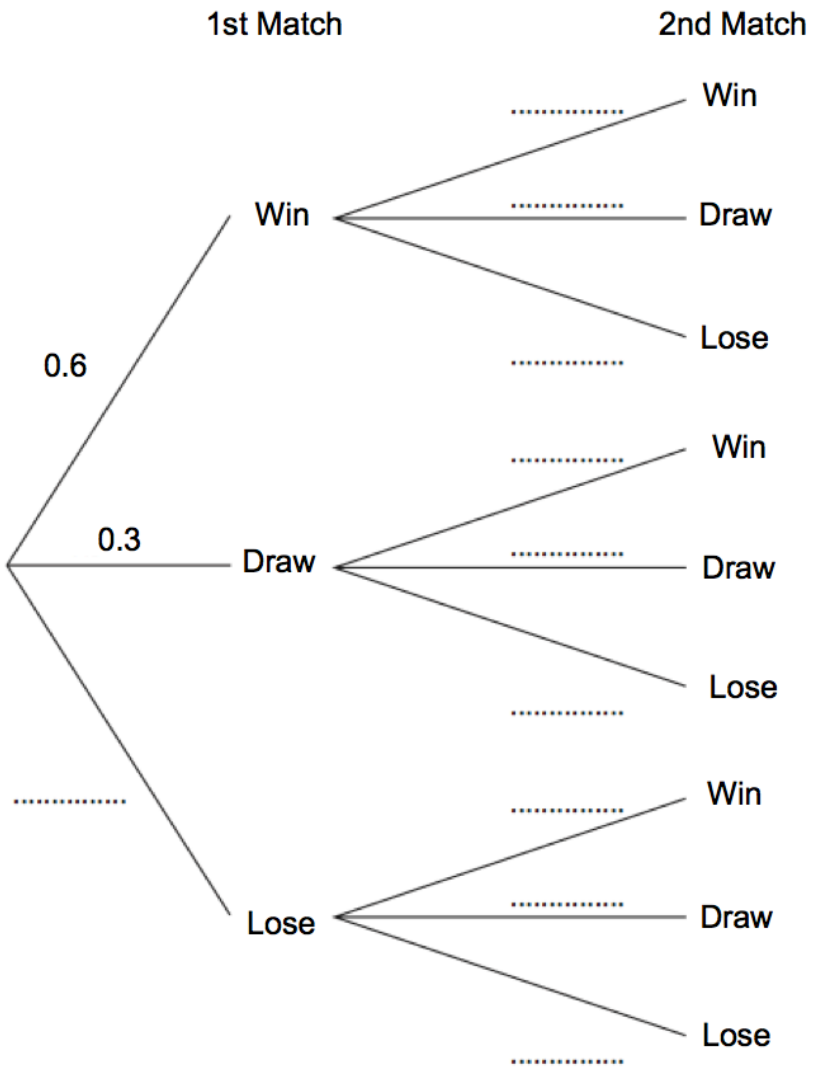
(2)

3. A football team has two matches to play.

The probability that the team wins is 0.6.
The probability that the team draws is 0.3.

(a) Complete the tree diagram.



(2)

(b) Work out the probability that the team will win both matches.

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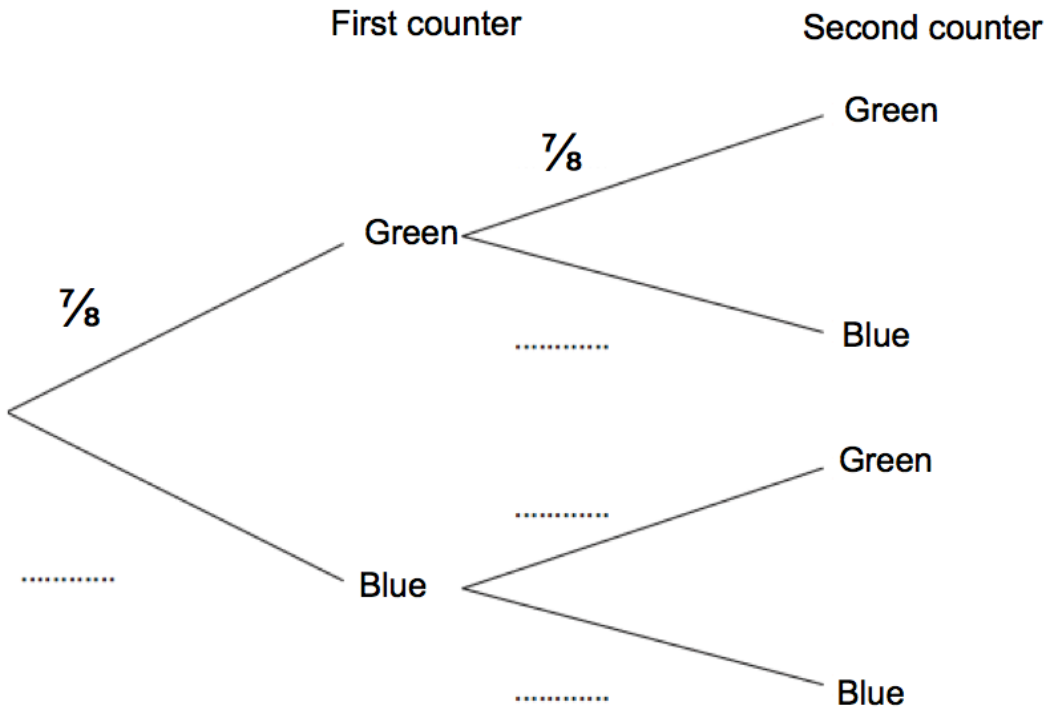
(2)

4. There are green and blue counters in a container.

Kevin takes at random a counter from the container.
He replaces the counter in the container.

Kevin takes at random a second counter from the container.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Kevin picks counters that are different colour.

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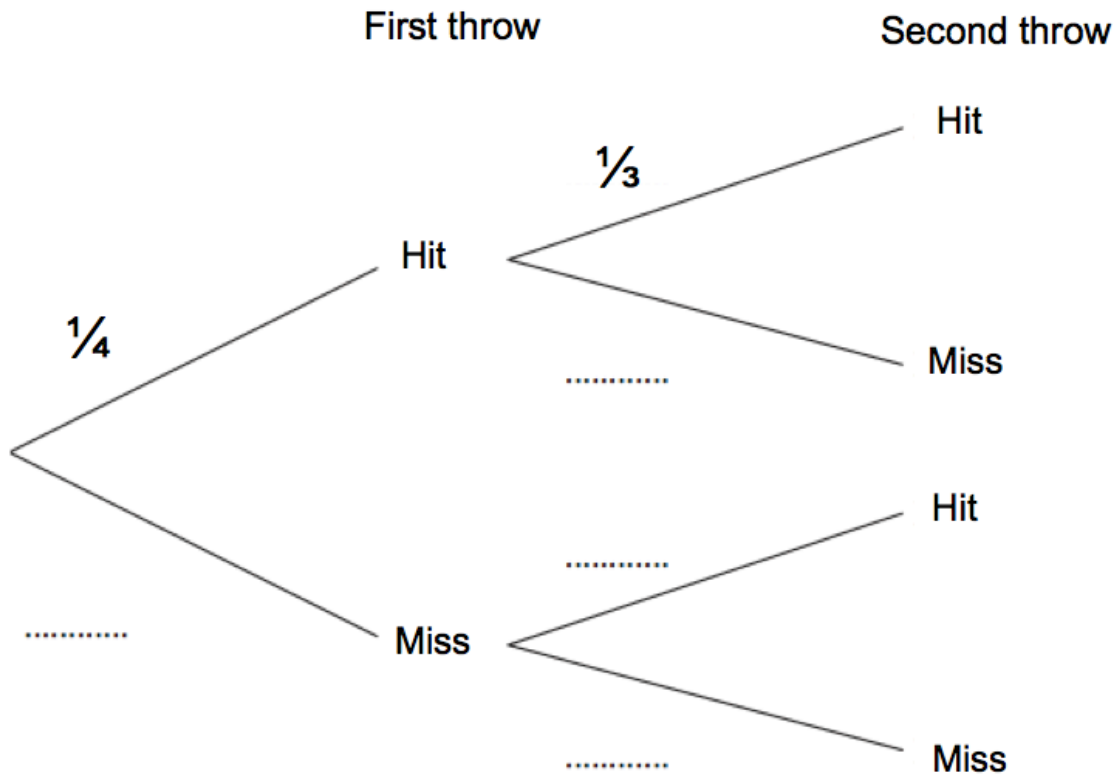
(2)

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

The probability Jennifer hits the Bullseye on her first throw is ¼.
The probability she hits the Bullseye on her second throw ⅓.

(a) Complete the tree diagram.



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

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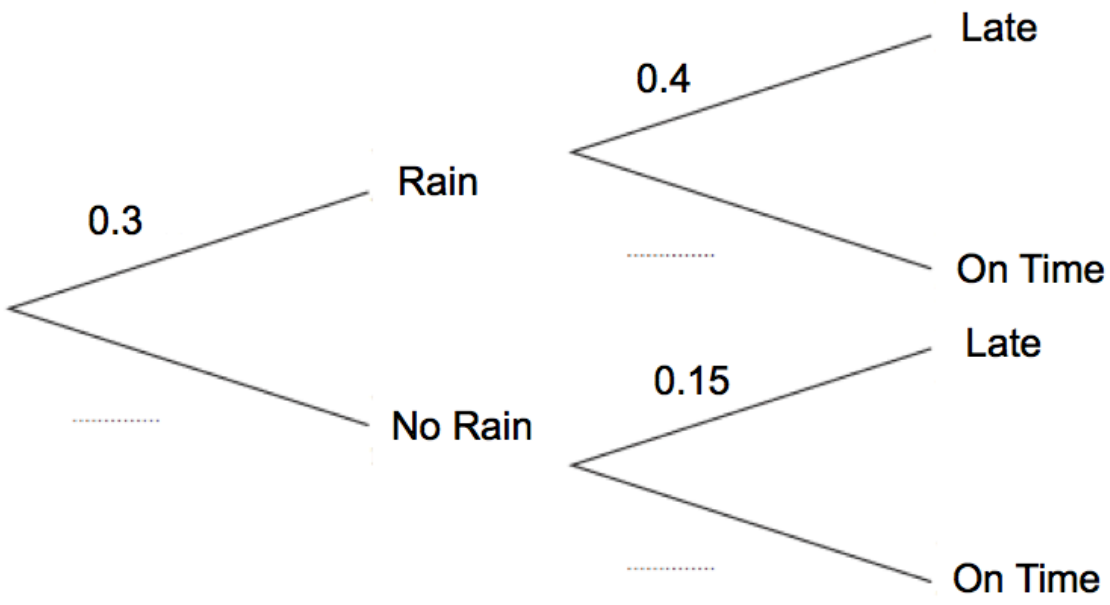
(2)

6. 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 will be late over a period of 80 days.

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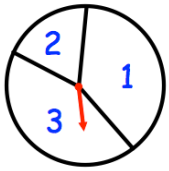
(3)

7. 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.

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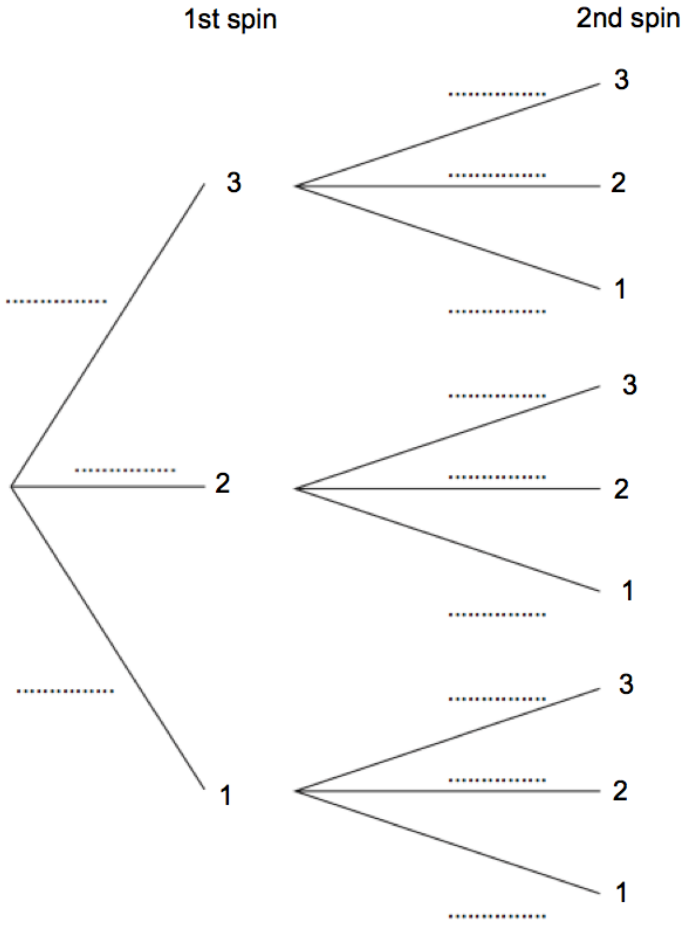
(2)

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)

8. 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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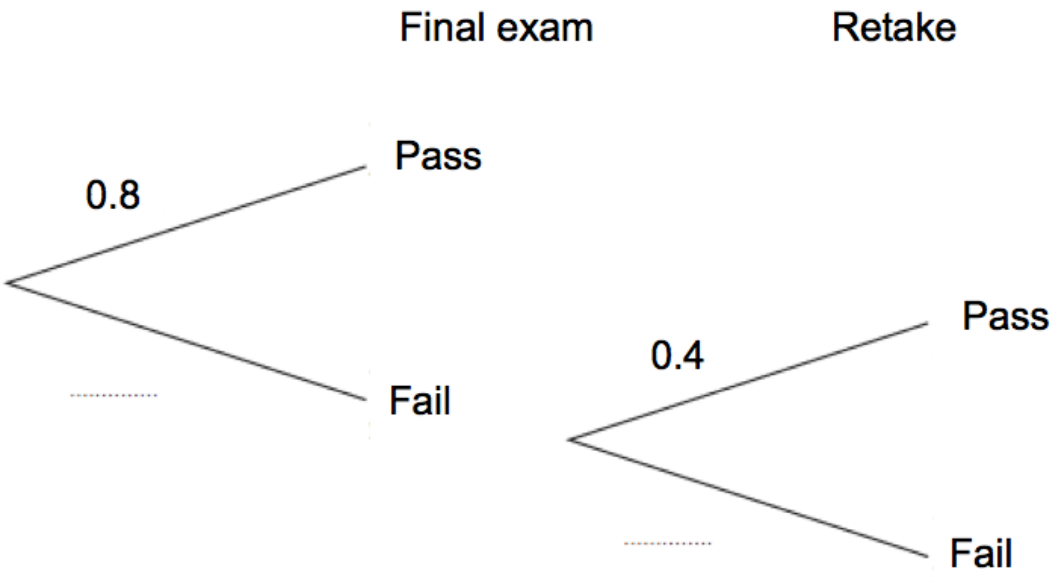
(2)

9. 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)

10. Sally and Laura sit their driving tests.

The probability of Sally passing her driving test is 0.7
The probability of both Sally and Laura passing is 0.56

(a) Work out the probability of Laura passing her driving test.

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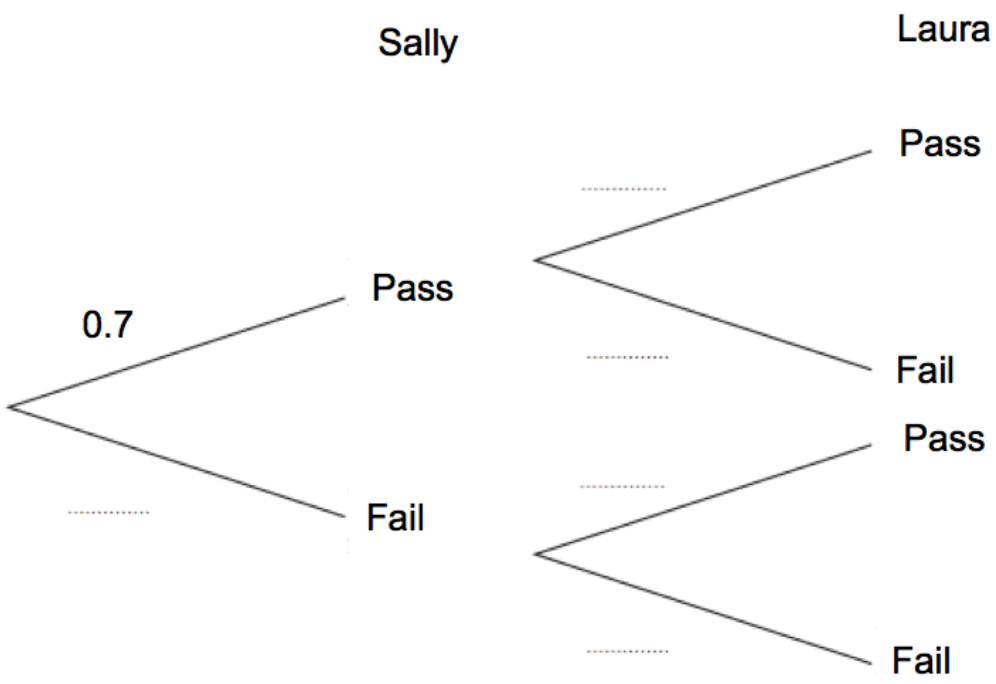
(2)

(b) Complete the tree diagram.



(2)

(c) Find the probability of both women failing.

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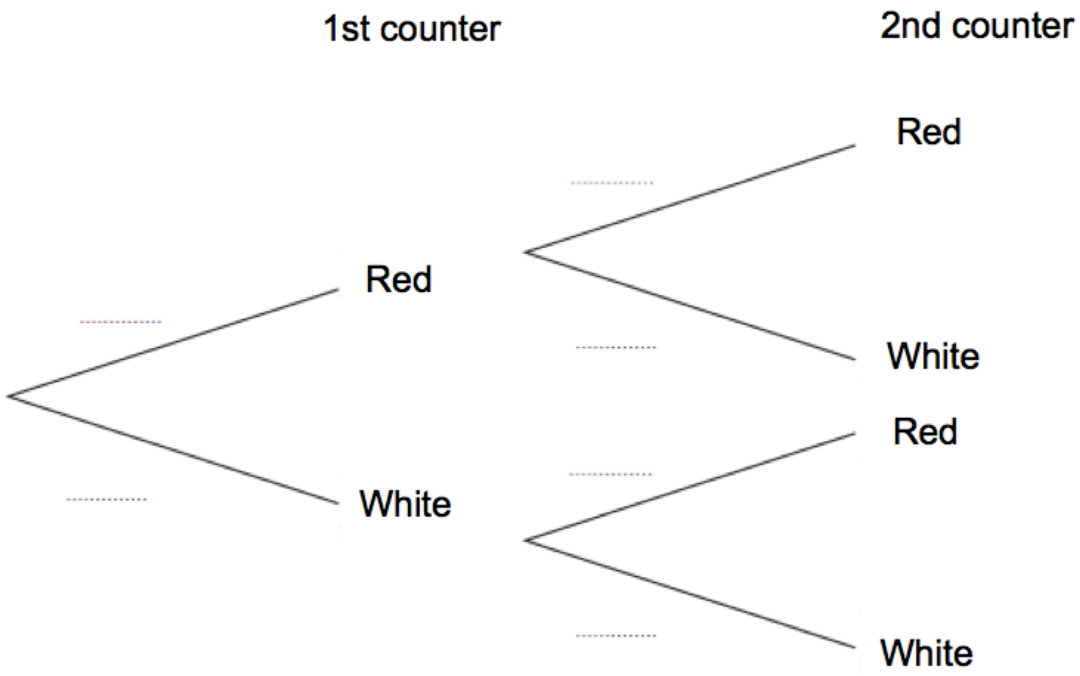
(2)

11. George has a bag of marbles.
There are 6 red and 4 white marbles.

George takes out a marble at random and records its colour.
Without replacement, George takes out another marble, at random.

(a) Complete the probability tree diagram.



(2)

(b) Find the probability that the two marbles are the same colour.

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(3)