


Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
TOTAL	

# GCSE Mathematics (Non-calculator Paper)

Practice Paper Style Questions  
Topic: Probability Trees (Higher Tier)

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>• black pen</li> <li>• HB pencil</li> <li>• ruler (with cm &amp; mm)</li> <li>• rubber</li> <li>• protractor</li> <li>• compass</li> <li>• pencil sharpener</li> </ul>	
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### Time allowed

- 1 hour

### Instructions

- Use **black ink** or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is **48**.  
The quality of your written communication is specifically assessed in questions indicated with an asterisk (\*)
- You may ask for more answer paper and graph paper.  
These must be tagged securely to this answer booklet.
- A calculator must NOT be used.

### Advice

- Read each question carefully before you answer it.
- In all calculations, show clearly how you work out your answer.
- Check your answers if you have time at the end.

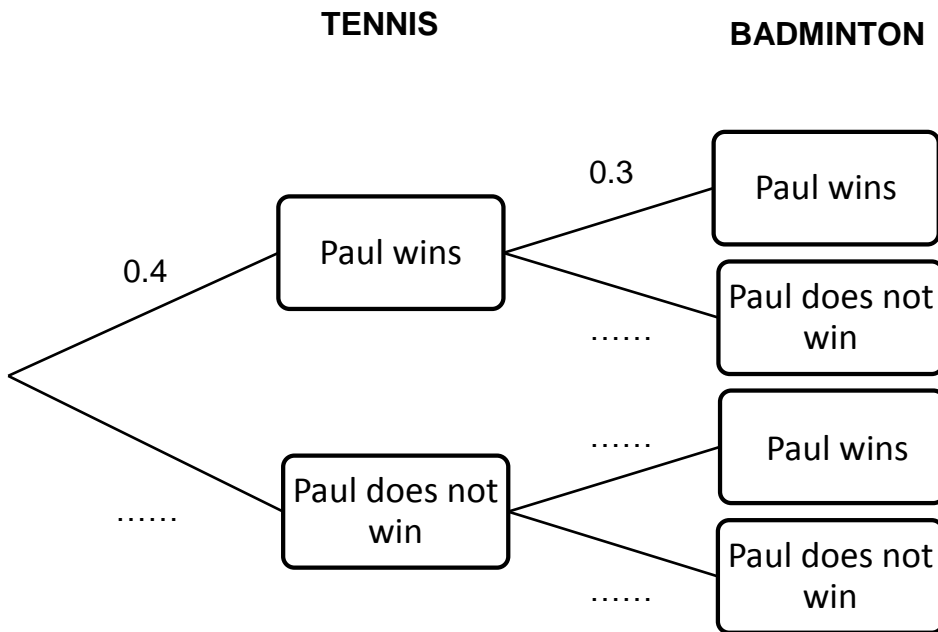
**There are no questions printed on this page**

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ANSWER IN THE SPACES PROVIDED**

- 1 Paul goes to a leisure club.  
 He has one game of tennis.  
 He has one game of badminton.  
 The probability that he wins at **tennis** is 0.4  
 The probability that he wins at **badminton** is 0.3



(a) Complete the probability tree diagram:



(2 marks)

(b) Work out the probability that Paul wins at tennis **and** also wins at badminton.

Answer ..... (2 marks)



3 Jo has 8 marbles in a bag.

5 of the marbles are green.

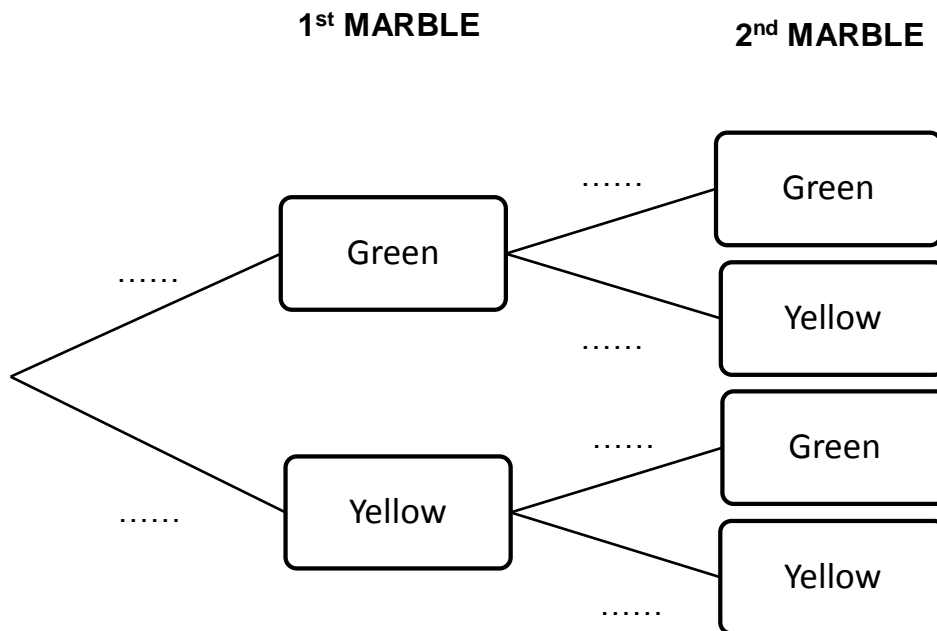
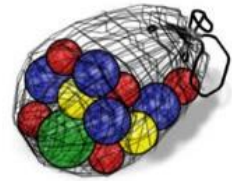
3 of the marbles are yellow.

Jo takes a marble at random from the bag and writes down its colour.

Jo puts the marble back in the bag.

Then Jo takes a second marble at random from the bag and writes down its colour.

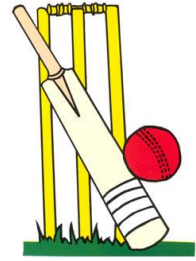
(a) Complete the probability tree diagram:



(2 marks)

(b) Work out the probability that Jo takes exactly one marble of each colour from the bag.

Answer ..... (3 marks)



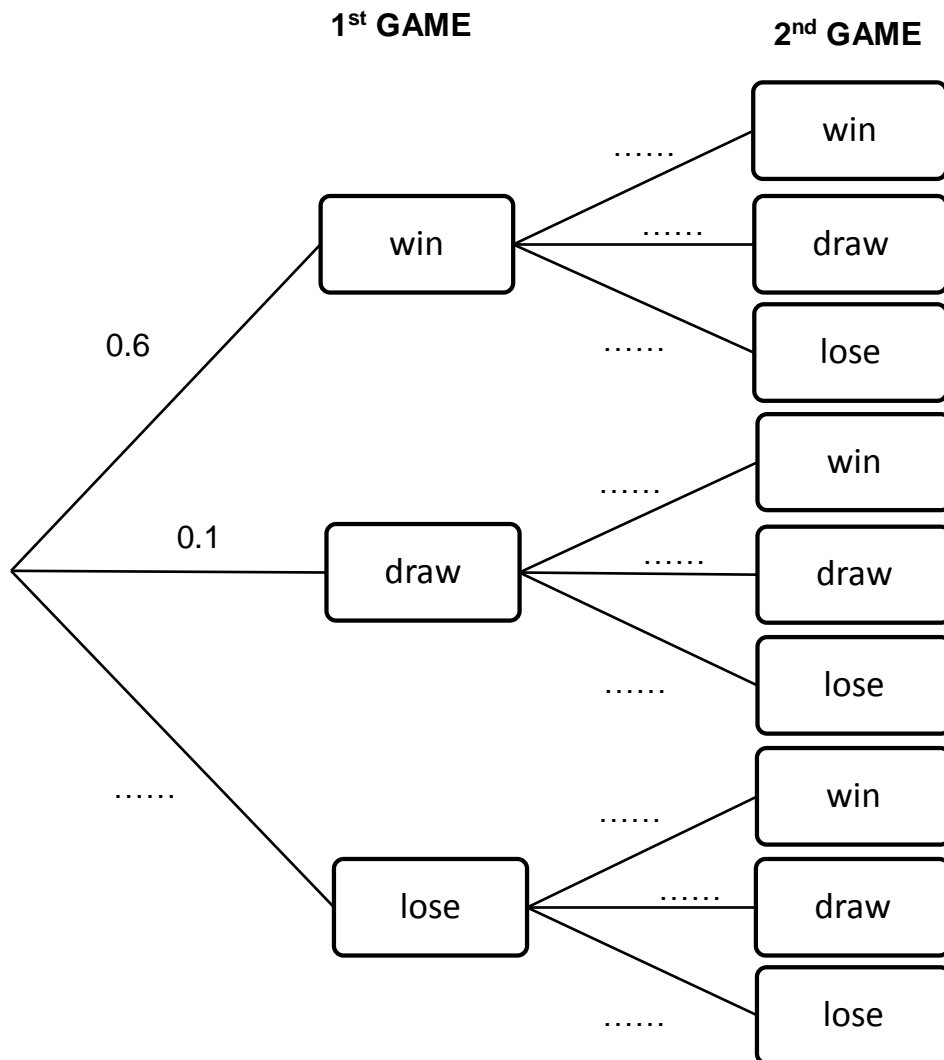
4 In a game of cricket a team can either win, draw or lose.

The probability that Paul's team **wins** any game of cricket is 0.6

The probability that Paul's team **draws** any game of cricket is 0.1

Paul's team plays two games of cricket.

(a) Complete the probability tree diagram:



(2 marks)

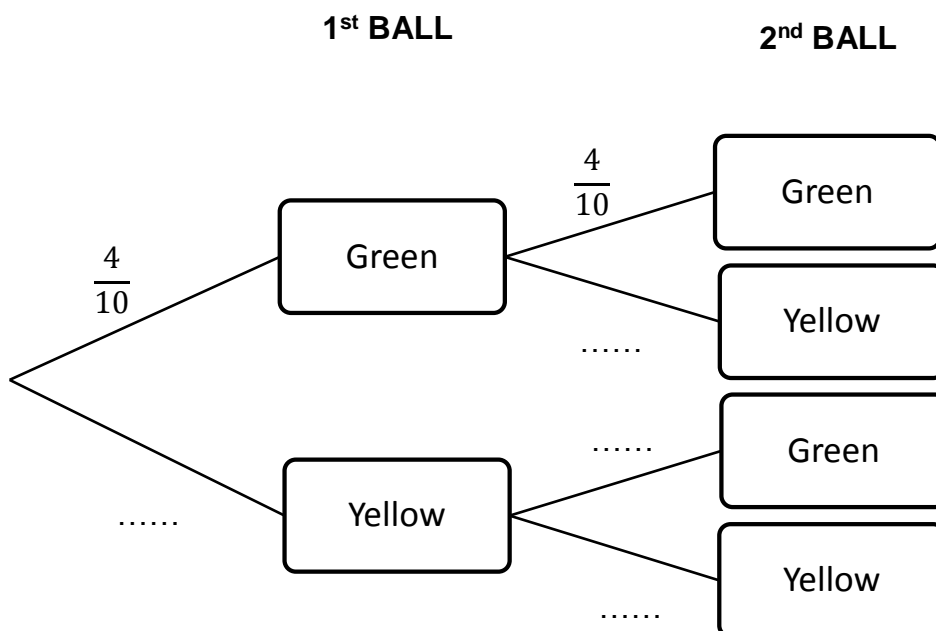
(b) Work out the probability that Paul's team will win **both** games.

Answer ..... (2 marks)

- 5 Tom puts 4 green and 6 yellow balls in a bag.  
He takes a ball at random from the bag and writes down its colour.  
He puts the ball back in the bag again.  
Then he takes a second ball at random from the bag and writes down its colour.



(a) Complete the probability tree diagram:



(2 marks)

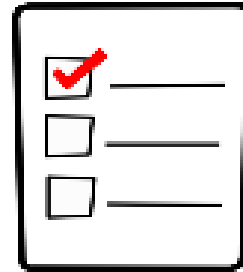
(b) Work out the probability that Tom takes **two** green balls.

Answer ..... (2 marks)

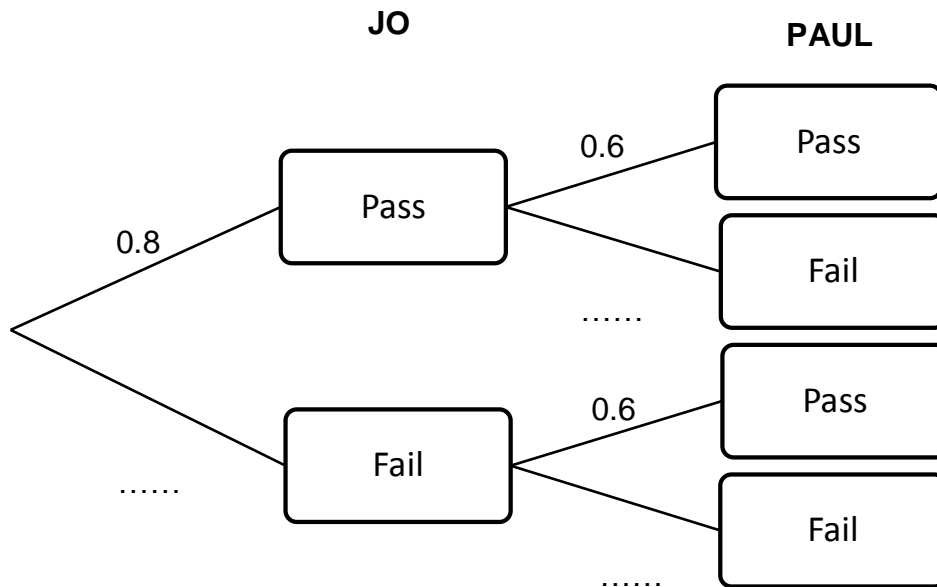
6 Jo and Paul each have a medical examination.

The probability that Jo will pass the medical is 0.8

The probability that Paul will pass the medical is 0.6



(a) Complete the probability tree diagram:



(b) Work out the probability that **both** Jo and Paul will **pass** the medical.

Answer ..... (2 marks)

(c) Work out the probability that **only one of them** will **pass** the medical.

Answer ..... (3 marks)



7 There are 4 green sweets, 5 yellow sweets and 8 pink sweets in a jar.

Jo takes a sweet at random and eats it.

She then takes another sweet at random.

Work out the probability that both the sweets are the same colour.



Answer ..... (4 marks)

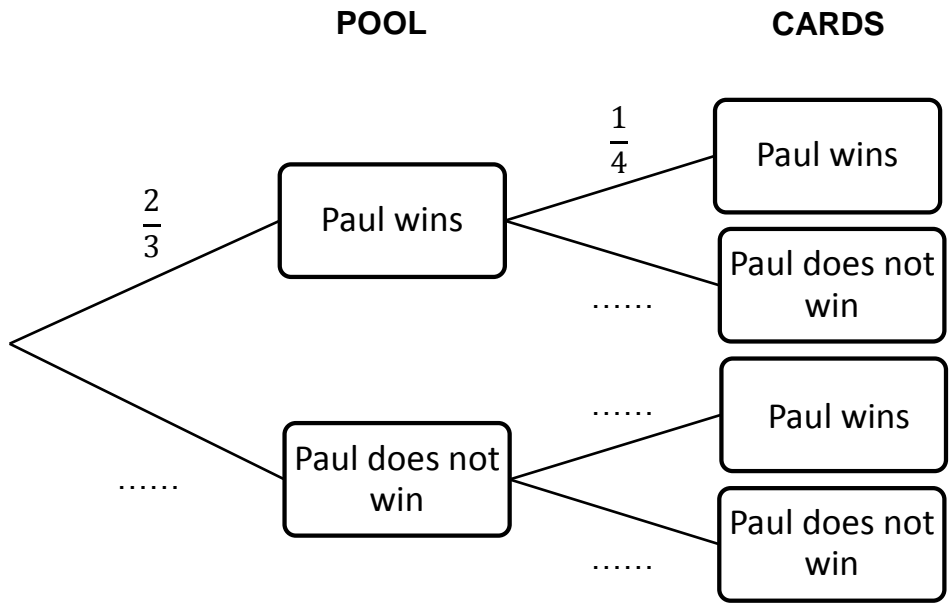
8 Paul is going to play one game of pool and one game of cards.

The probability that he will win the game of **pool** is  $\frac{2}{3}$

The probability that he will win the game of **cards** is  $\frac{1}{4}$



(a) Complete the probability tree diagram:



(2 marks)

(b) Work out the probability that Paul will win **exactly** one game.

Answer ..... (3 marks)

Paul played one game of pool and one game of cards on a number of Saturdays.

He won at **both** pool and cards on 24 Saturdays.

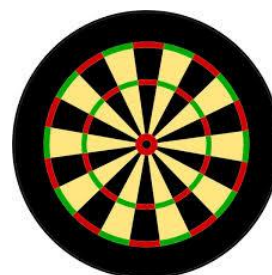
(c) Work out an estimate for the number of Saturdays on which Paul did not win either game.

Answer ..... (4 marks)

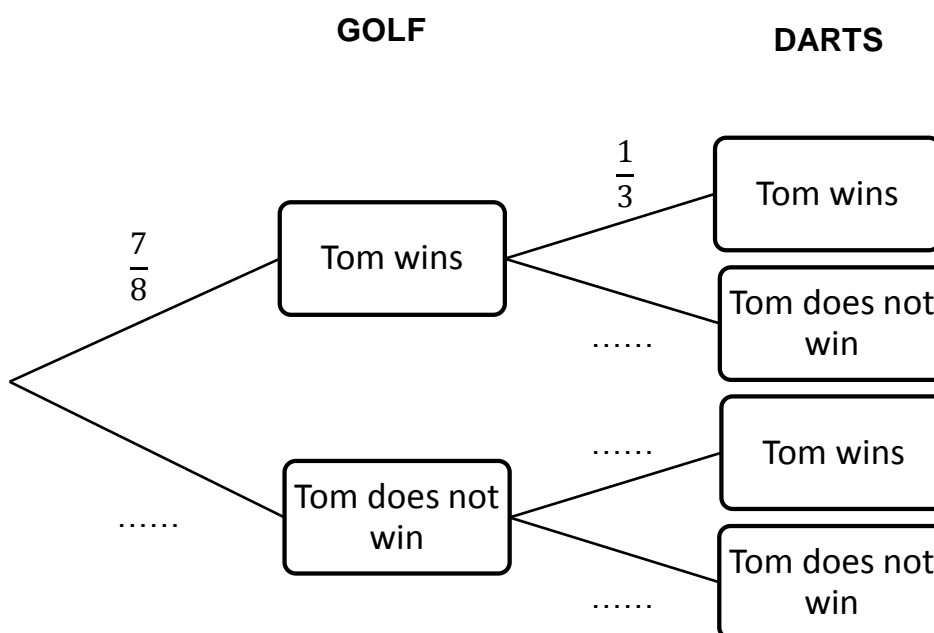
9 Tom plays one game of golf and one game of darts.

The probability that he will win the game of **golf** is  $\frac{7}{8}$

The probability that he will win the game of **darts** is  $\frac{1}{3}$



(a) Complete the probability tree diagram below:



(2 marks)

**(b)** Work out the probability that Tom wins **both** games.

*Answer* ..... (2 marks)

**(c)** Work out the probability that Tom will only win **one** game.

*Answer* ..... (3 marks)

**END OF QUESTIONS**

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**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

