| Name | Class |
|---|---|
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MATHS TEACHER HUB

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# Probability trees

## (9 – 1) Topic booklet

# Foundation

**These questions have been collated from previous years GCSE Mathematics papers.**

| **You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. | Total Marks |
|---|---|

## Instructions

•Use **black** ink or ball-point pen.
•**Fill in the boxes** at the top of this page with your name, centre number and candidate number.
•Answer **all** questions.
•Answer the questions in the spaces provided
– *there may be more space than you need*.
•Diagrams are NOT accurately drawn, unless otherwise indicated.
•You must **show all your working out.**
•If the question is a **1F** question you are not allowed to use a calculator.
•If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

**Information**

•The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question*.

**Advice**

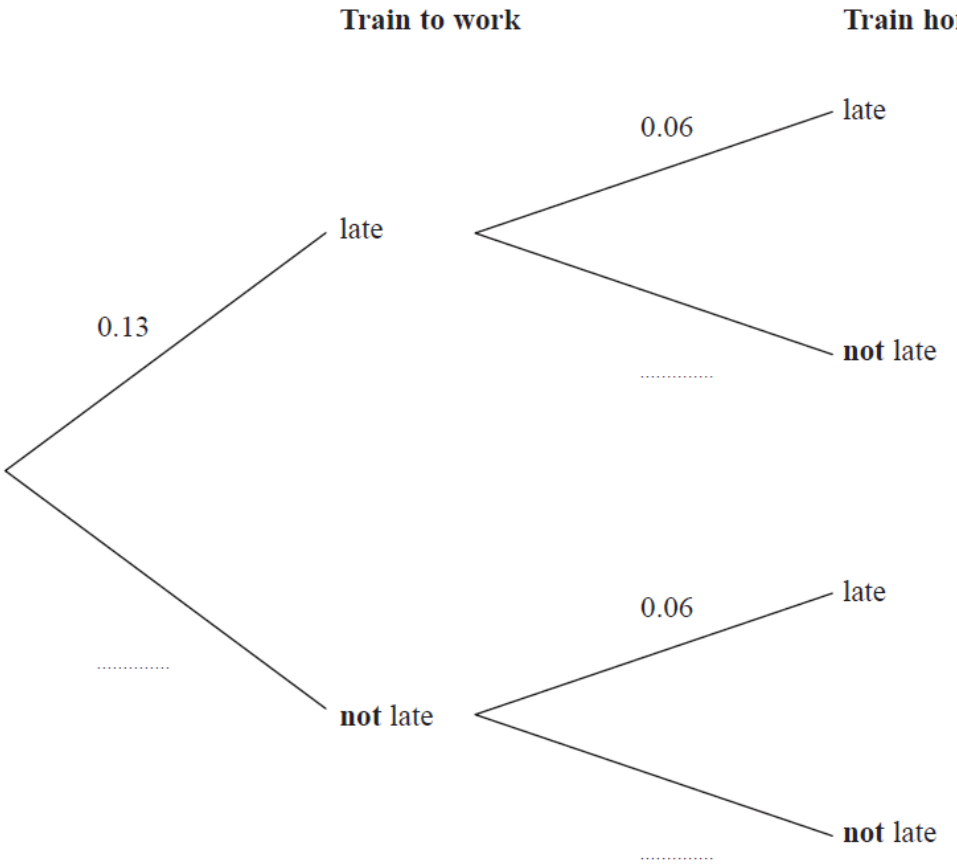
•Read each question carefully before you start to answer it.
•Keep an eye on the time.
•Try to answer every question.
•Check your answers if you have time at the end.

**Answer ALL questions**
**Write your answers in the space provided.**
**You must write down all the stages in your working.**

**20** Lorena gets a train at the same time each morning to go to work.
She gets a train at the same time each evening to come home.

The probability tree diagram shows the probabilities of each train arriving late.

(a) Complete the probability tree diagram.




**(2)**

For a day that Lorena goes to work,

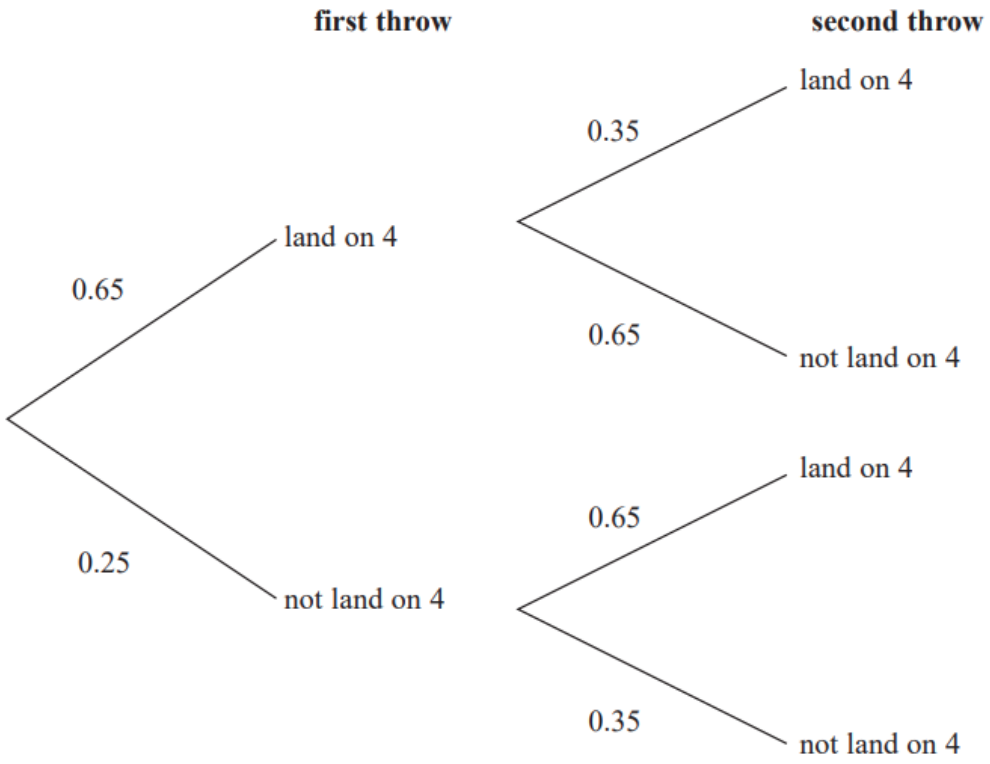
(b) work out the probability that the train to work and the train home will both arrive late.

**(2)**

**(Total for Question 20 is 4 marks)**

**22** When a biased 6-sided dice is thrown once, the probability that it will land on 4 is 0.65
The biased dice is thrown twice.

Amir draws this probability tree diagram.
The diagram is **not** correct.




Write down **two** things that are wrong with the probability tree diagram.

1 .....

.....

2 .....

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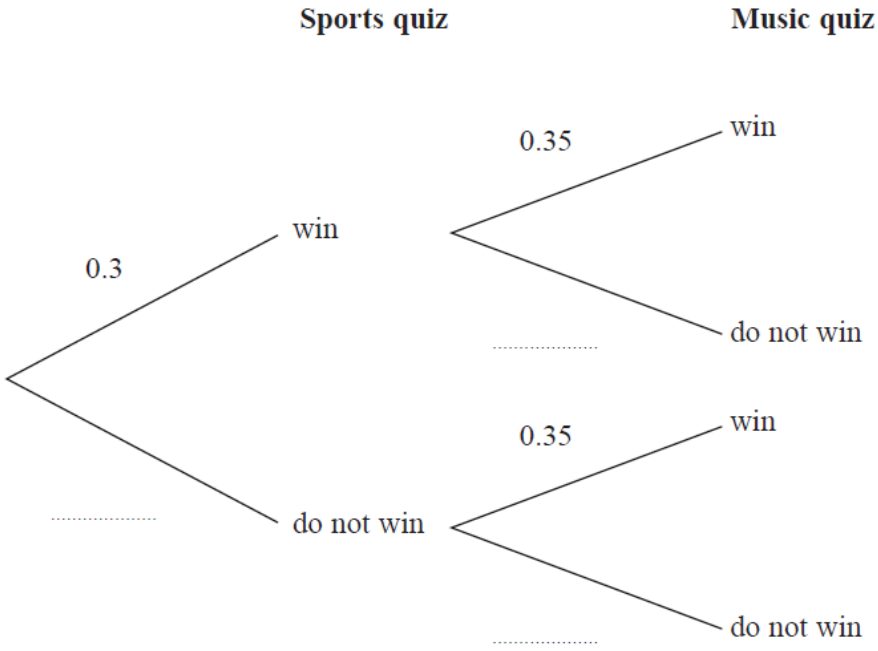
May 2018 – Paper 3F **(Total for Question 22 is 2 marks)**

**26** One weekend the Keddie family is going to do a sports quiz and a music quiz.

The probability that the family will win the sports quiz is 0.3
The probability that the family will win the music quiz is 0.35

(a) Complete the probability tree diagram.




**(2)**

(b) Work out the probability that the Keddie family will win both the sports quiz and the music quiz.

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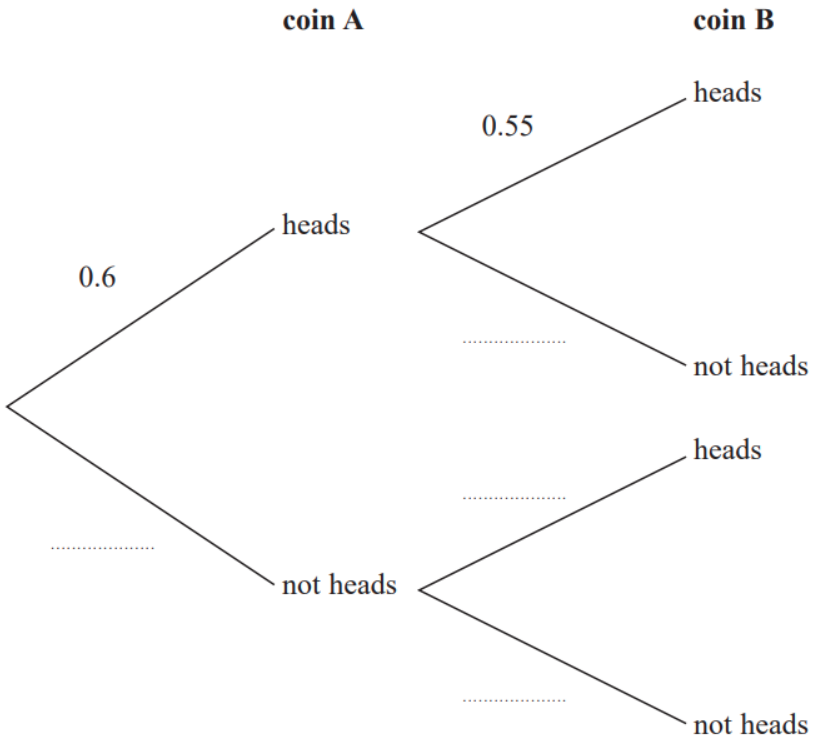
**(2)**

**(Total for Question 26 is 4 marks)**

**27** Tim has two biased coins, coin **A** and coin **B**.
He is going to throw both coins.

The probability that coin **A** will land on heads is 0.6
The probability that coin **B** will land on heads is 0.55

(a) Complete the probability tree diagram.




**(2)**

Tim throws coin **A** once and he throws coin **B** once.

(b) Work out the probability that both coins land on heads.

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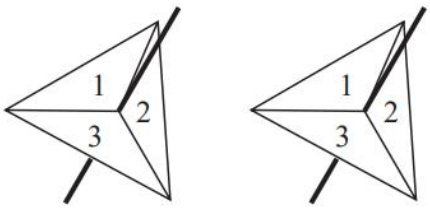
**(2)**

**(Total for Question 27 is 4 marks)**

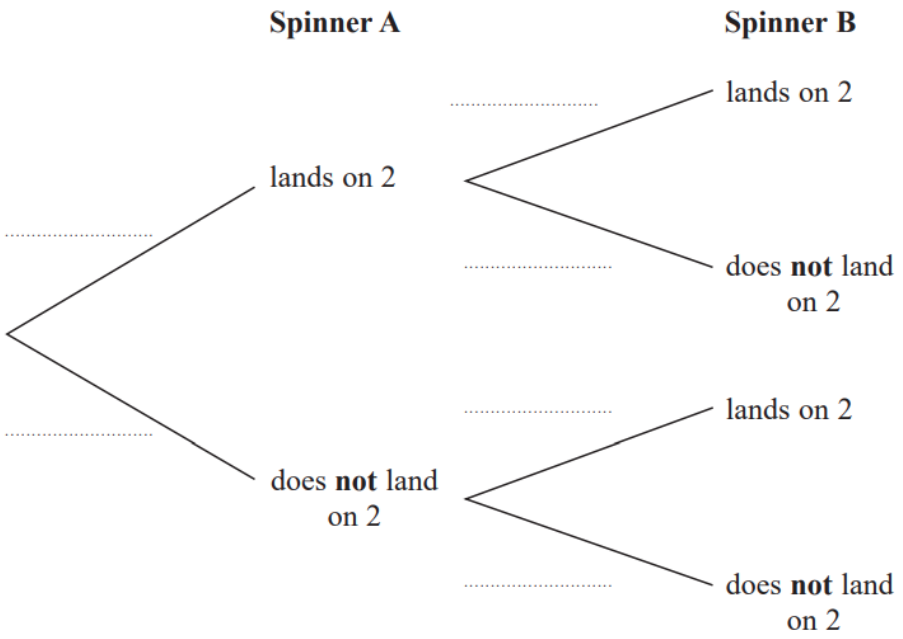
**27** Amanda has two fair 3-sided spinners.




**Spinner A** **Spinner B**

Amanda spins each spinner once.

(a) Complete the probability tree diagram.




**(2)**

(b) Work out the probability that Spinner A lands on 2 and Spinner B does **not** land on 2

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**(2)**

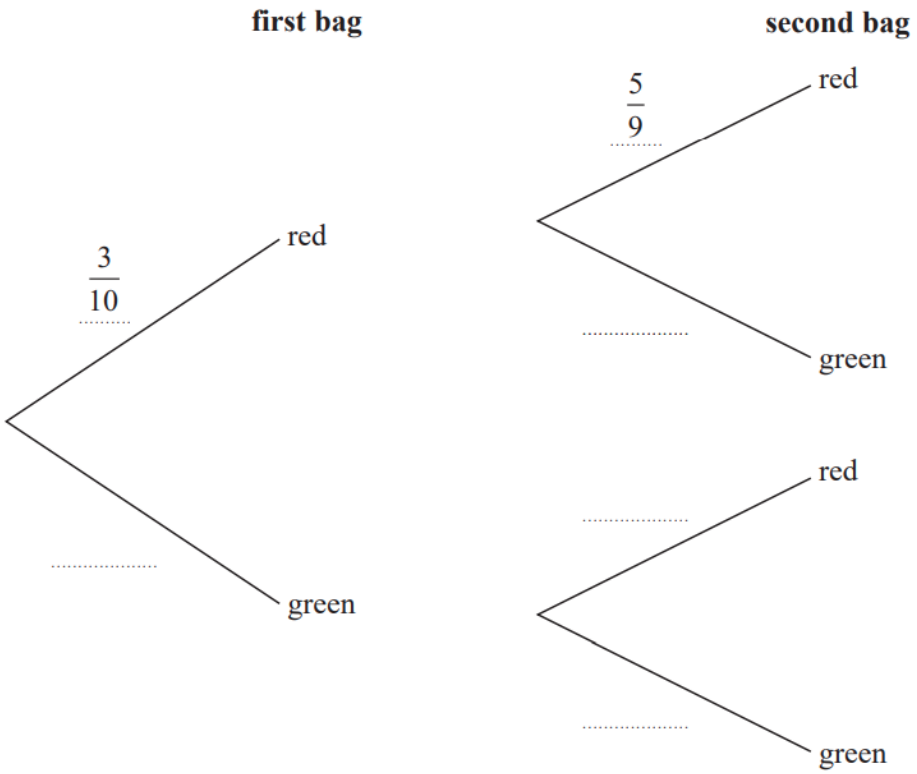
May 2020 – Paper 3F **(Total for Question 27 is 4 marks)**

**27** Amina has two bags.

In the first bag there are 3 red balls and 7 green balls.
In the second bag there are 5 red balls and 4 green balls.

Amina takes at random a ball from the first bag.
She then takes at random a ball from the second bag.

(a) Complete the probability tree diagram.




**(2)**

(b) Work out the probability that Amina takes two red balls.

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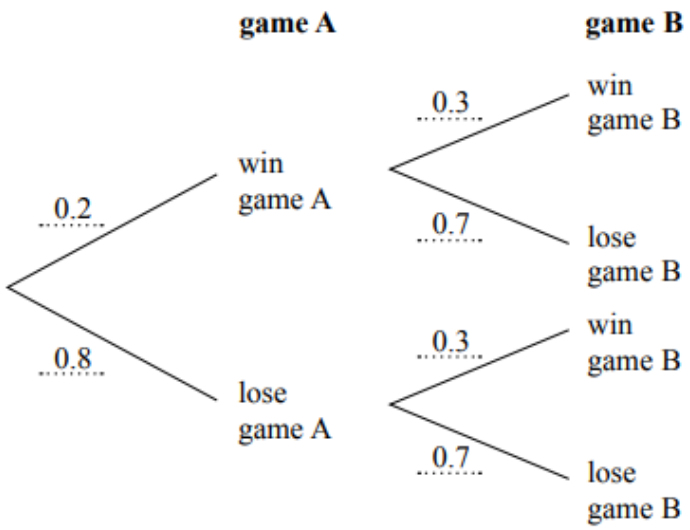
**(2)**

**(Total for Question 27 is 4 marks)**

**29** Here is a probability tree diagram.




Work out the probability of winning both games.

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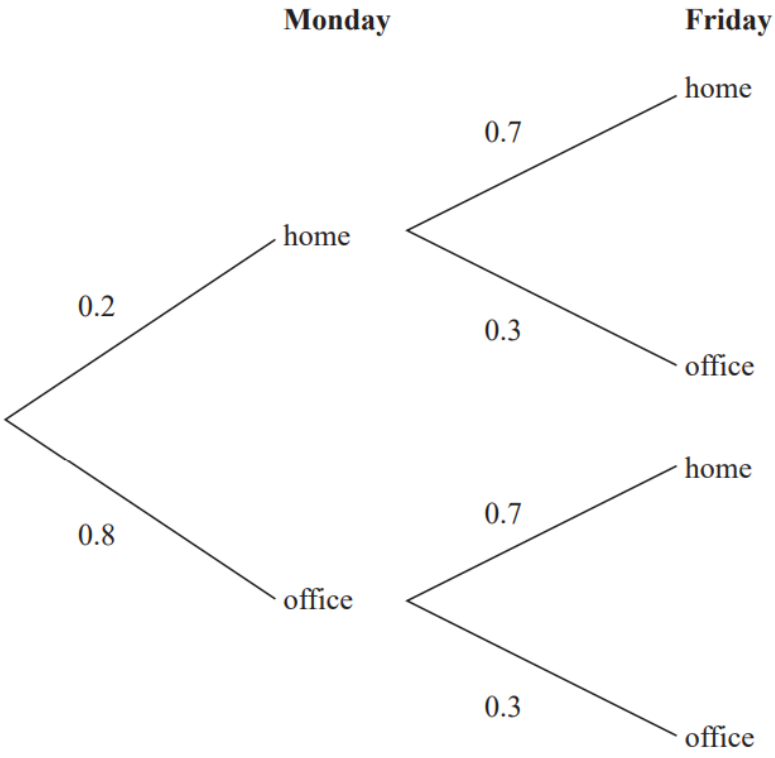
**(Total for Question 29 is 2 marks)**

**31** The probability tree diagram shows the probabilities that Shayla will work at home or will work at the office on two days next week.




Work out the probability that Shayla will work at home on Monday and work at the office on Friday.

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**(Total for Question 31 is 2 marks)**