

## Frequency Trees

Please write clearly in block capitals

Forename:

Surname:

### Materials

For this paper you must have:

- mathematical instruments



You *can* use a calculator.

### 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 spaces 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 you do not want to be marked.

### Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

### Advice

- In all calculations, show clearly how you work out your answer.

- 1 The table shows a group of students different eye and hair colours.

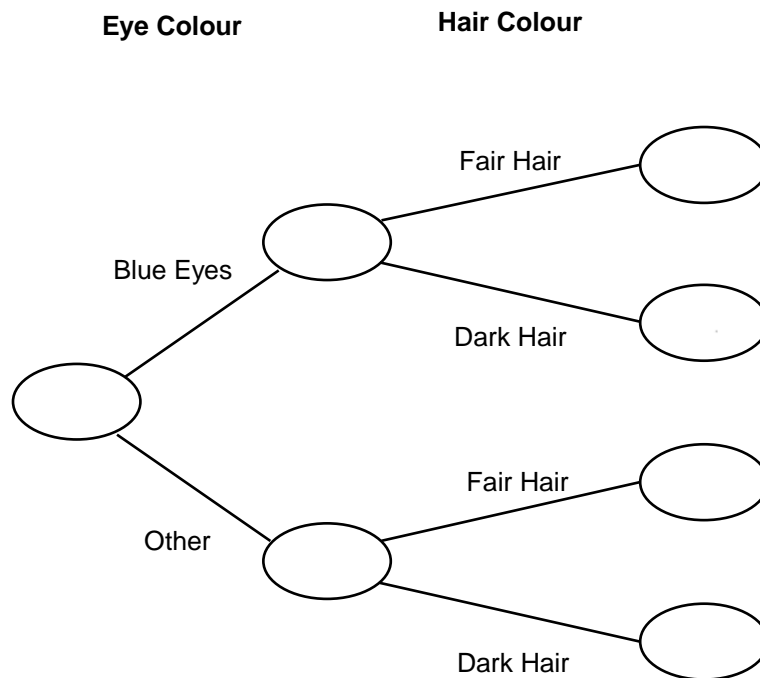
	Fair hair	Dark hair	Total
Blue eyes	8		13
Other		10	
Total	15	15	

- 1(a) Complete the table above.

[3 marks]

- 1(b) Use the table to complete the frequency tree below.

[3 marks]

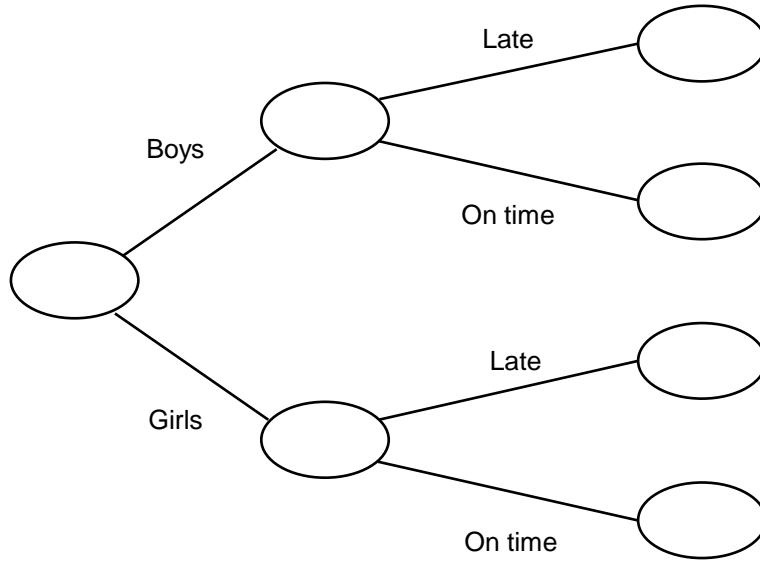


Turn over for next question

- 2** There are 150 pupils in Year 8, 85 of the pupils are boys, the rest are girls.  
 14 of the boys were late to school on Monday.  
 8 girls were late to school on Monday.

**2(a)** Use the information above to complete the frequency tree below.

**[4 marks]**




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- 2(b)** A pupil is chosen at random.  
 Find the probability they are a girl that arrived on time.  
 Give your answer as a fraction.

**[1 mark]**

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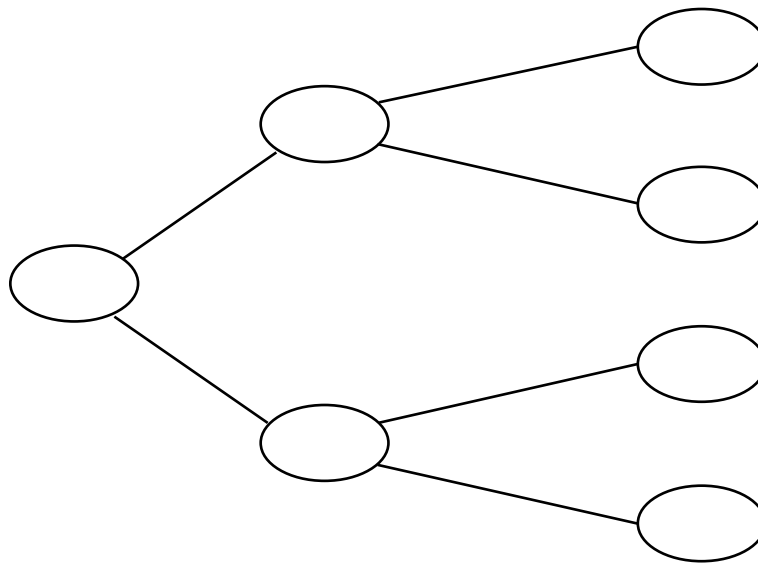
Answer \_\_\_\_\_

**Turn over for next question**

- 3** There are 100 members in a local diving club.  
 45 of the members are male, the rest are female.  
 13 of the female members are under 17, the rest are 17 or over.  
 $\frac{3}{5}$  of the males are under 17, the rest are 17 or over.

- 3(a)** Use the information above to complete the frequency tree.  
 Ensure you label each section correctly.

[5 marks]




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- 3(b)** What percentage of the members are under 17?

[2 marks]

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Answer \_\_\_\_\_ %

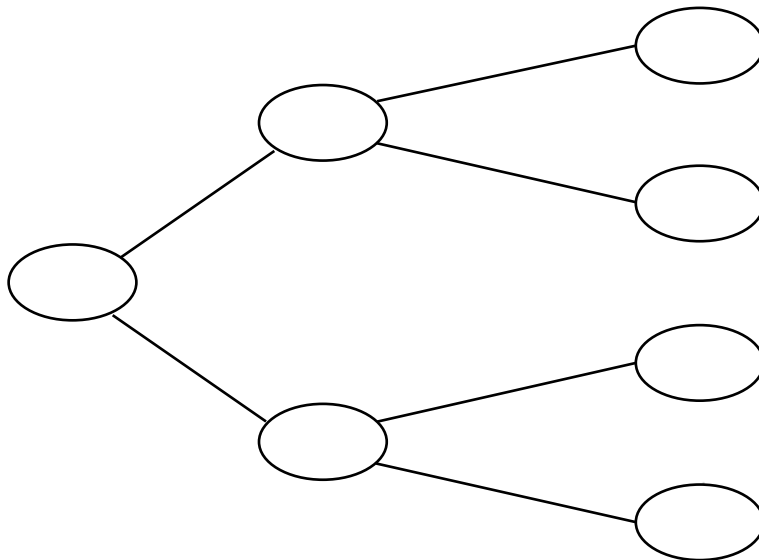
**Turn over for next question**

Turn over ►

- 4 There are 200 pupils in a 6<sup>th</sup> form.  
In the 6<sup>th</sup> form there are two year groups: lower sixth and upper sixth.  
There are 120 pupils in lower sixth.  
The ratio of male to female pupils in lower sixth is 5:7  
45% of the upper sixth pupils are female.

Use the information above to complete the frequency tree.  
Ensure you label each section correctly.

[6 marks]



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Turn over for next question

Turn over ►

5 Over 1 weekend, 400 people go to the cinema.  
The cinema sells two different types of ticket:

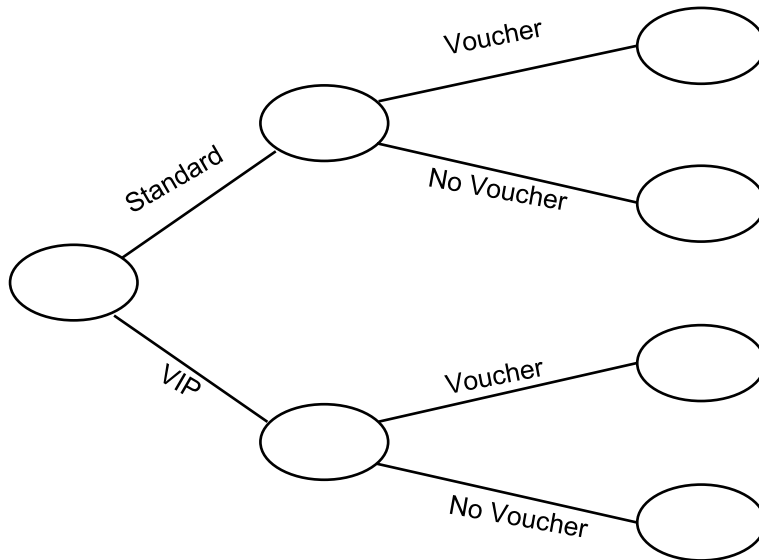
**Standard Tickets for £5.00**

**VIP Tickets for £7.00**

140 people bought VIP tickets.  
80 people used a 10% off voucher for their tickets.  
One fifth of the VIP ticket holders used the voucher.

5(a) Use the information above to complete the frequency tree.

[4 marks]



5(b) Calculate how much money the cinema made in ticket sales that weekend.

[4 marks]

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Answer \_\_\_\_\_

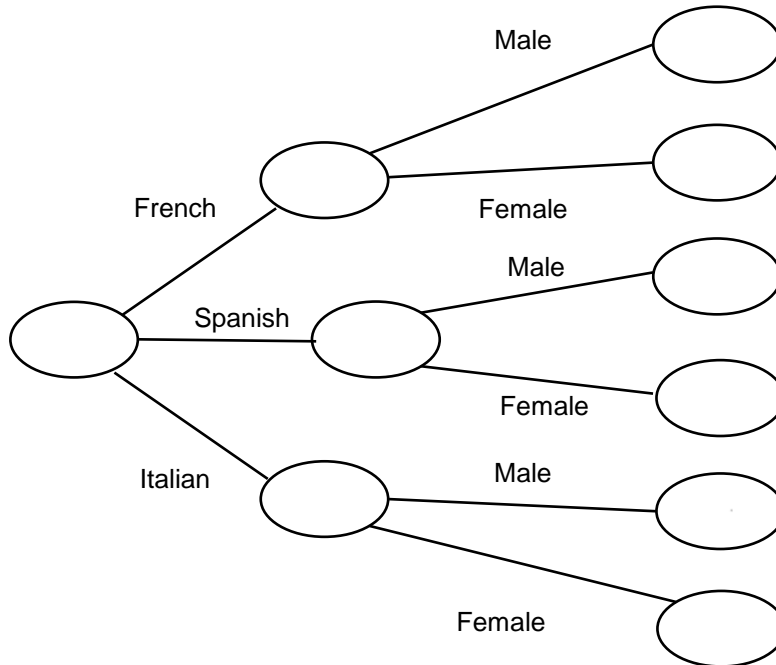
Turn over ►

6 345 GCSE students are asked to pick one language out of French, Spanish or Italian.

- French has 30 more students than Spanish.
- Italian was picked by half as many students that chose French.
- $\frac{2}{3}$  of those studying French are female.
- 55% of those studying Spanish are male.
- The ratio of male to female that study Italian is 2:1

6(a) Use the information above to complete the frequency tree.

[4 marks]



6b) How many of the GCSE students are male?

[1 mark]

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Answer \_\_\_\_\_