Name ANSWERS	Class

MATHS TEACHER HUB

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Frequency 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

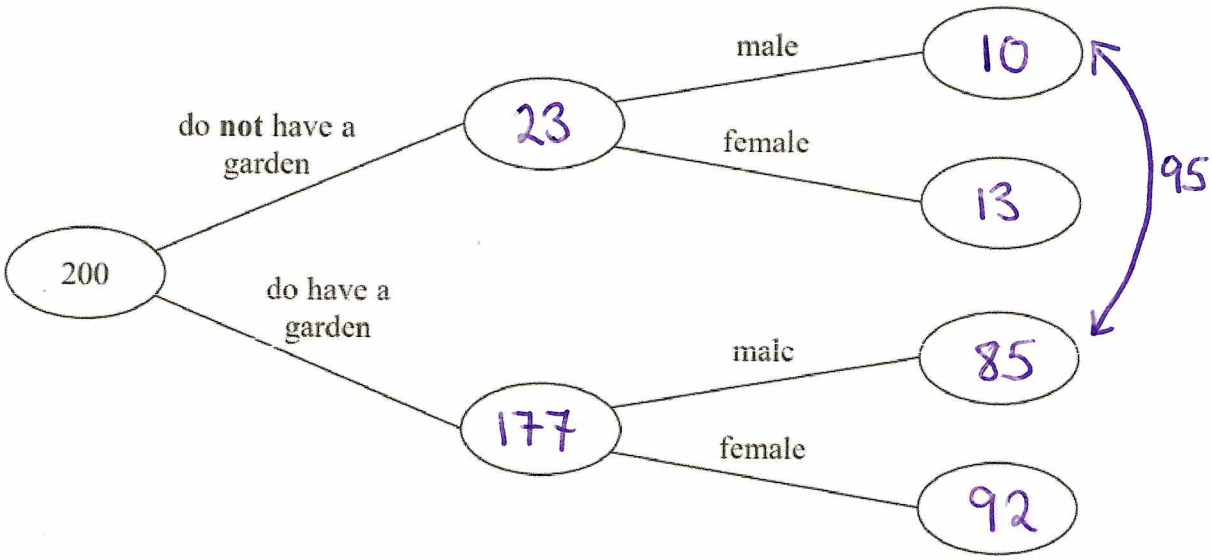
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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

12 200 people live in a village.

23 people do **not** have a garden.
10 males do **not** have a garden.
95 people are male.

(a) Use this information to complete the frequency tree.



(3)

One of the people who does **not** have a garden is chosen at random.

(b) Write down the probability that this person is female.

$\frac{13}{23}$

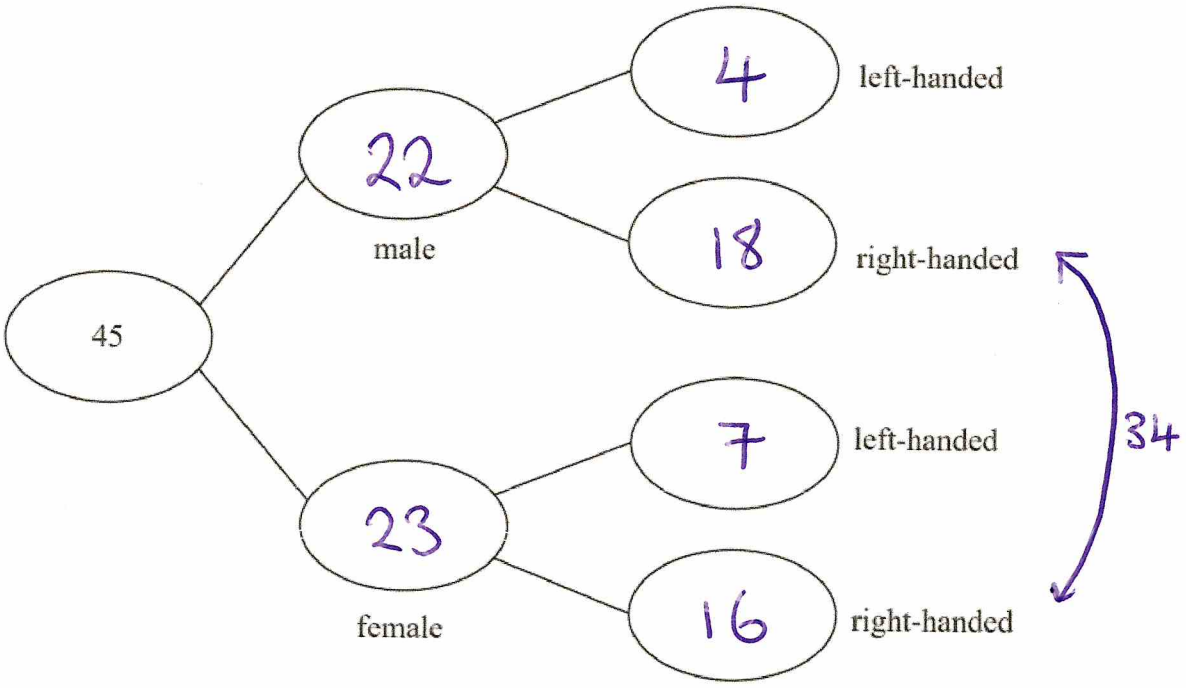
(2)

(Total for Question 12 is 5 marks)

14 Each worker in a factory is either left-handed or right-handed.

22 of the 45 workers are male.
16 of the 34 right-handed workers are female.

Complete the frequency tree for this information.



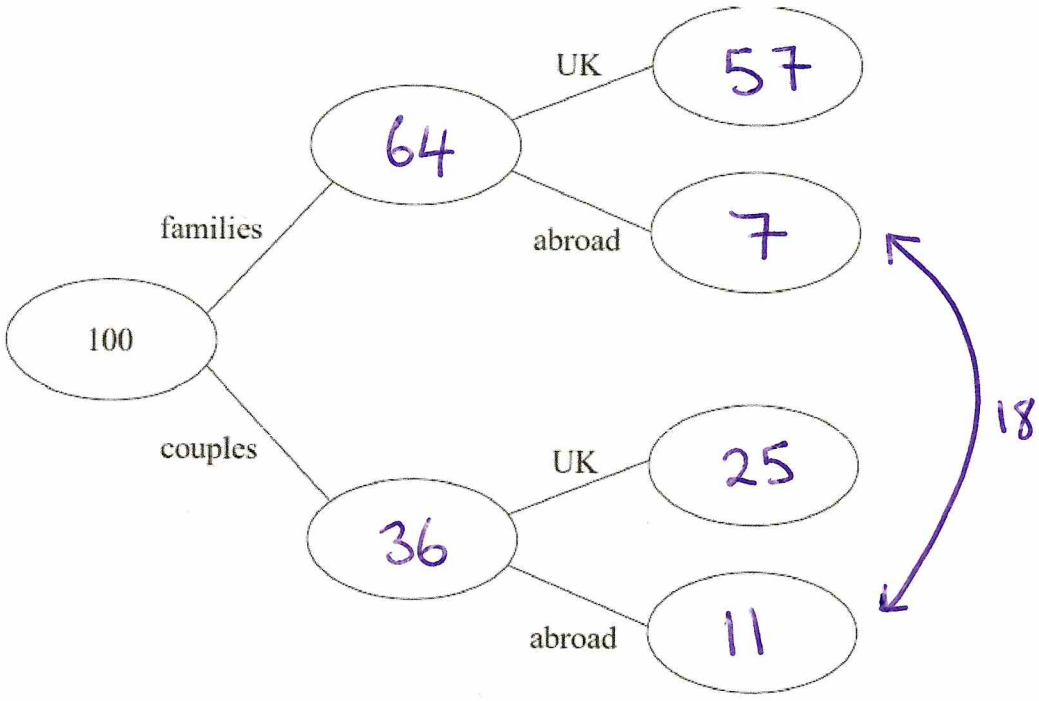
(Total for Question 14 is 3 marks)

15 A travel agent sold 100 holidays in April.
Each of these holidays was in the UK or was abroad.

64 of the 100 holidays were sold to families.
The rest of the holidays were sold to couples.

11 of the 18 holidays abroad were sold to couples.

(a) Use this information to complete the frequency tree.



(3)

One of the holidays sold to a family is chosen at random.

(b) Find the probability that this holiday was **not** abroad.

$\frac{57}{64}$

(2)

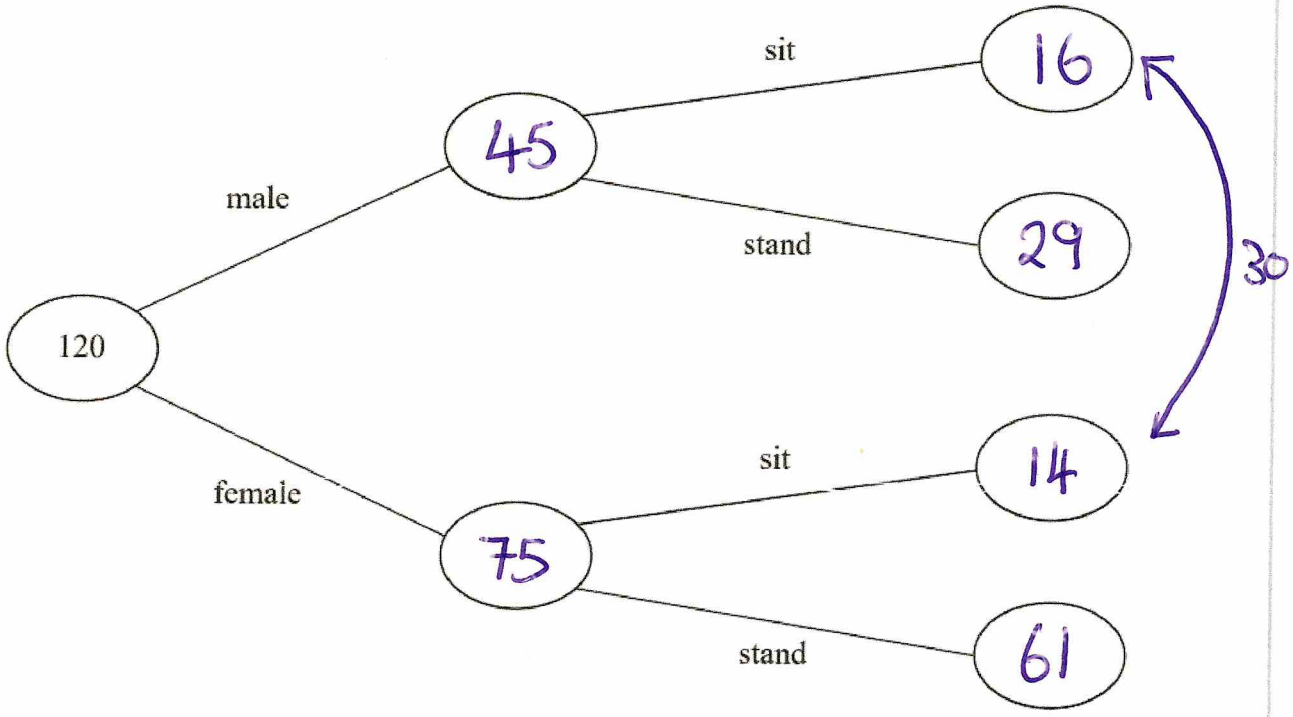
(Total for Question 15 is 5 marks)

15 120 people were at a hockey match.

Each person was asked if they wanted to stand or to sit to watch the match.

75 of the people were female
29 of the males wanted to stand
30 of the people wanted to sit

(a) Use this information to complete the frequency tree.



(3)

One of the 120 people is chosen at random.

(b) Write down the probability that this person is a male who wanted to stand.

$\frac{29}{120}$

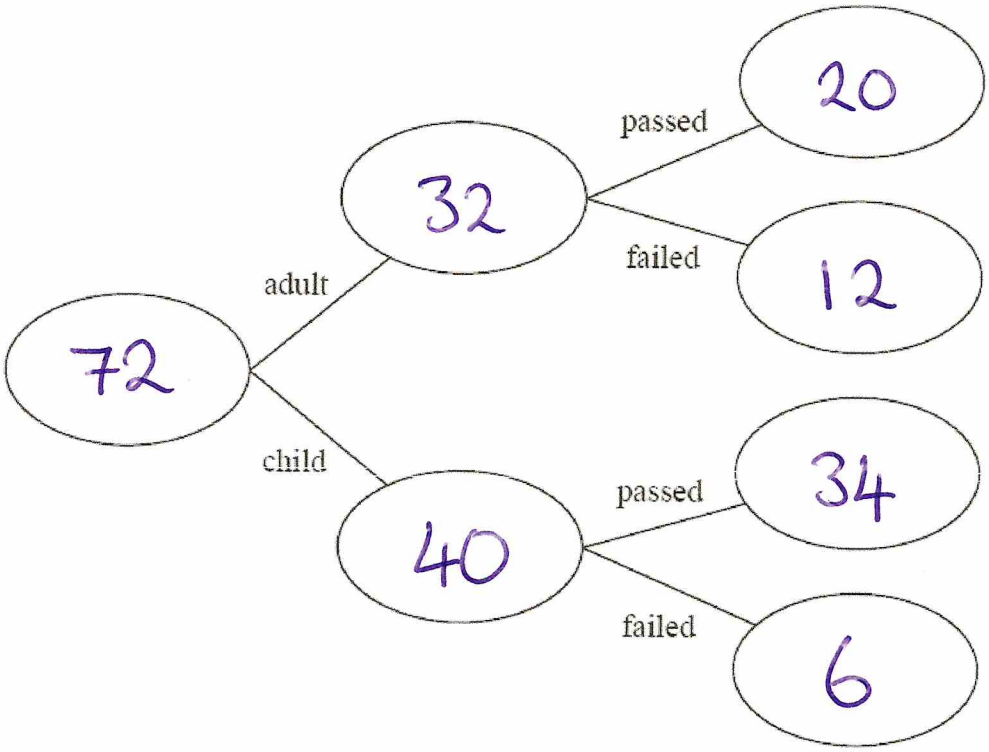
(1)

(Total for Question 15 is 4 marks)

17 72 people did a test.

20 of the 32 adults who did the test passed.
6 of the children who did the test failed.

(a) Use this information to complete the frequency tree.



(3)

One of these people is picked at random.

(b) Find the probability that this person is an adult who failed the test.

$\frac{12}{72} = \frac{1}{6}$

(2)

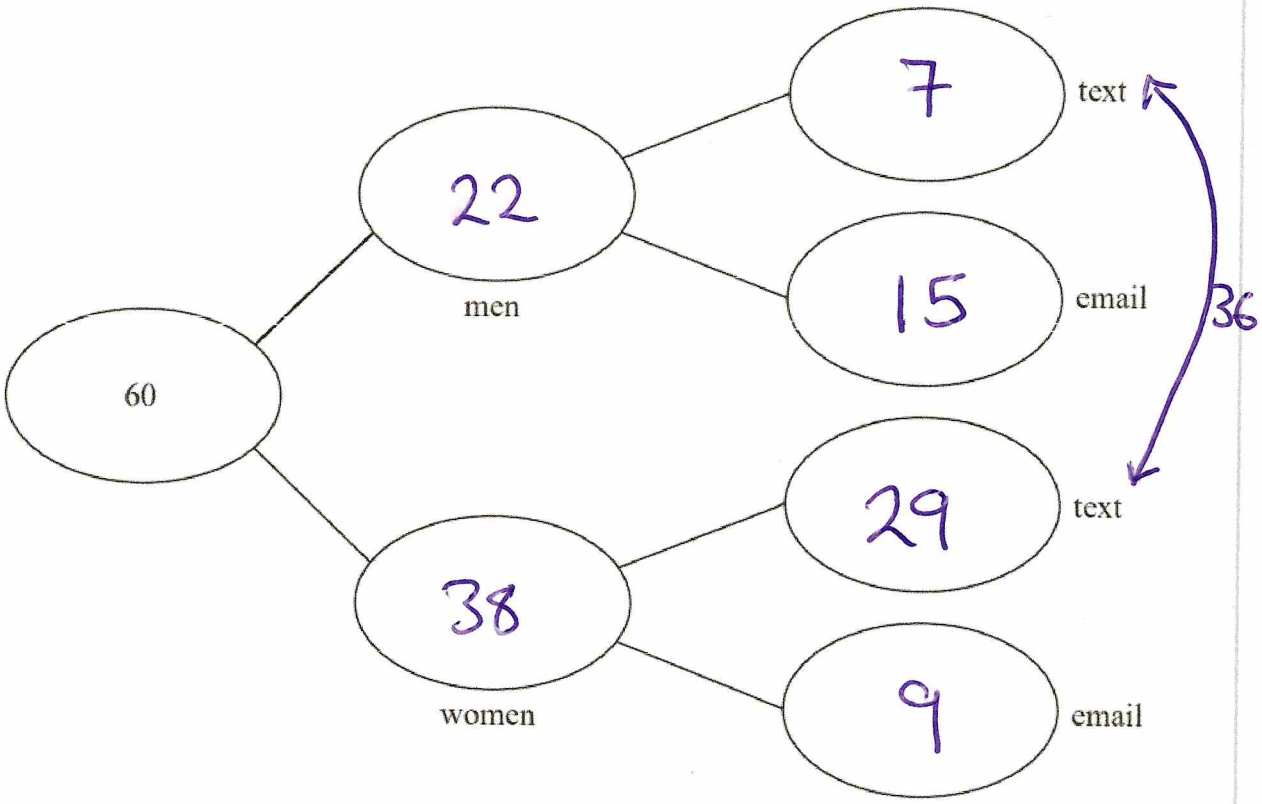
(Total for Question 17 is 5 marks)

17 60 people are asked if they prefer to text or to email their friends.

38 of the people are women and the rest are men.
15 of the men prefer to email their friends.
60% of the people prefer to text their friends.

Complete the frequency tree for this information.

100% = 60
10% = 6
60% = 36

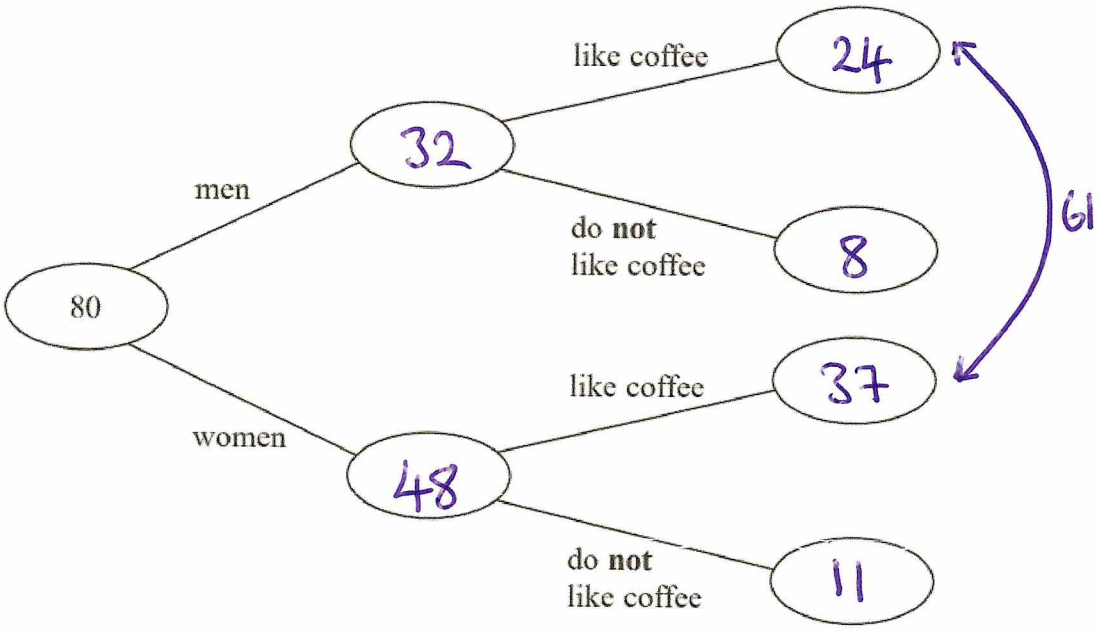


(Total for Question 17 is 5 marks)

17 80 people are asked if they like coffee.

48 of these people are women.
61 of the 80 people like coffee.
8 of the men do **not** like coffee.

(a) Use this information to complete the frequency tree.



(3)

One of the people who like coffee is chosen at random.

(b) Find the probability that this person is a woman.

like coffe = 24 + 37 = 61

$\frac{37}{61}$

(2)

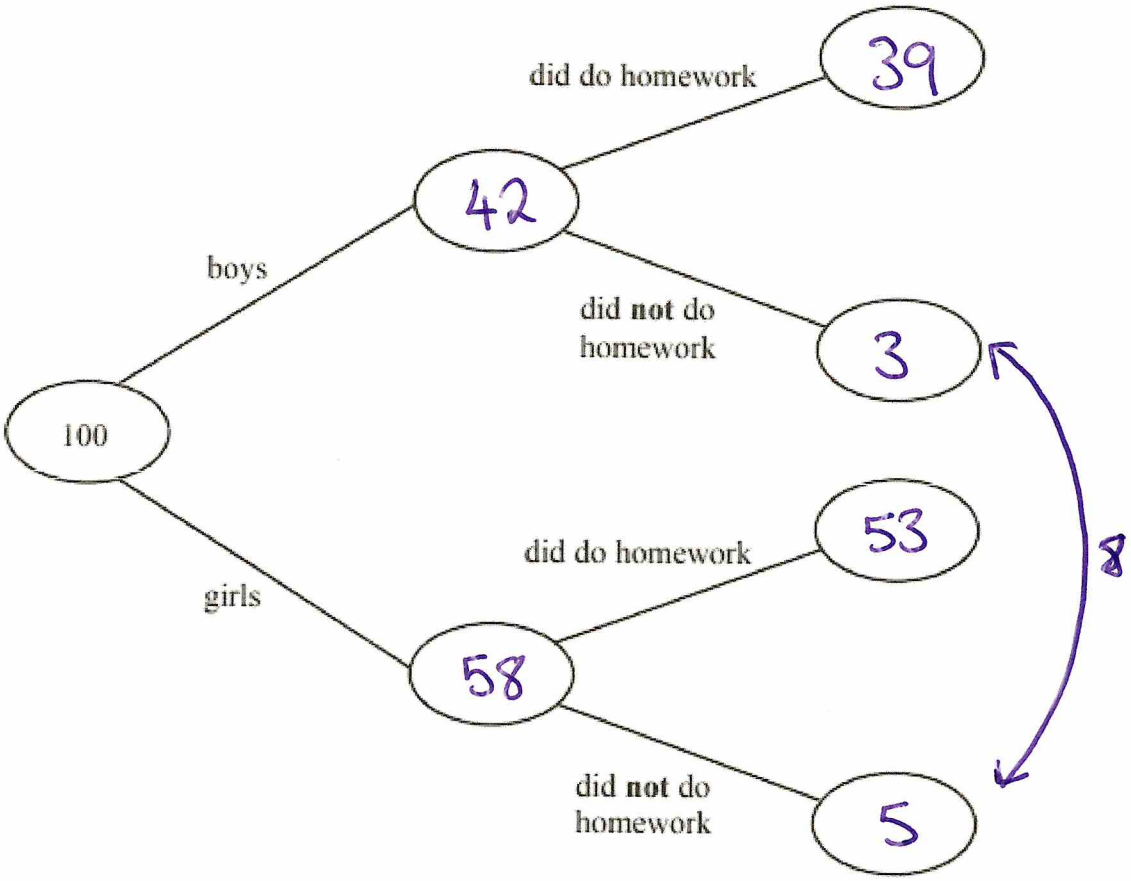
(Total for Question 17 is 5 marks)

17 100 students had some homework.

42 of these students are boys.
8 of the 100 students did **not** do their homework.
53 of the girls did do their homework.

(a) Use this information to complete the frequency tree.

(3)



One of the girls is chosen at random.

(b) Work out the probability that this girl did **not** do her homework.

$\frac{5}{58}$

(2)

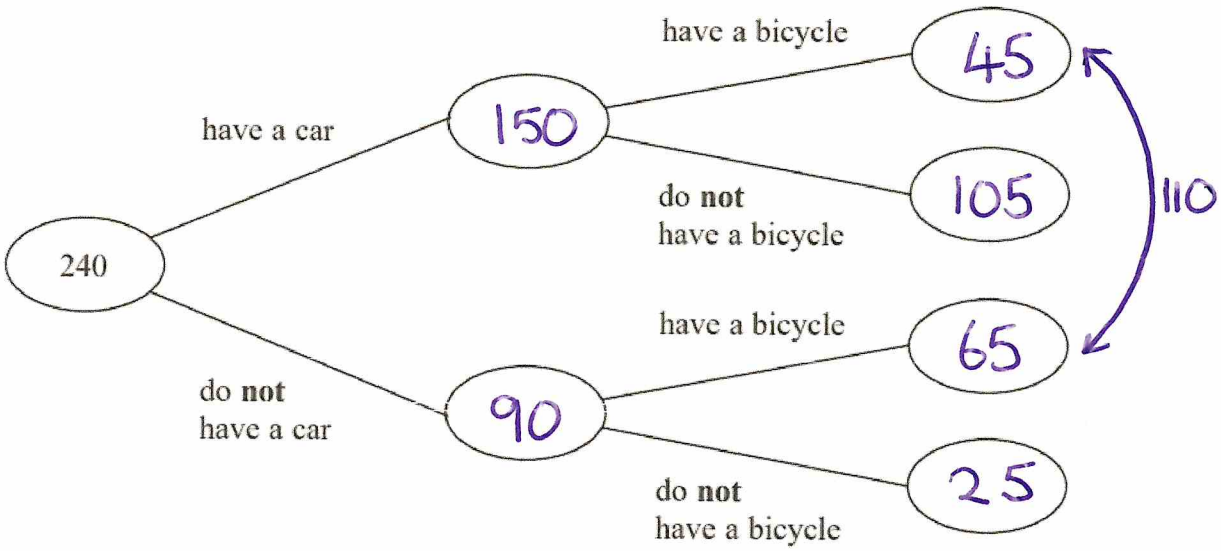
(Total for Question 17 is 5 marks)

19 240 people work at a factory.

Of these people

150 have a car
110 have a bicycle
65 of the people who have a bicycle do **not** have a car.

(a) Use this information to complete the frequency tree.



(3)

(b) What percentage of the 150 people who have a car also have a bicycle?

$\frac{45}{150} = \frac{3}{10} = 0.3$

30 %

(2)

(Total for Question 19 is 5 marks)