

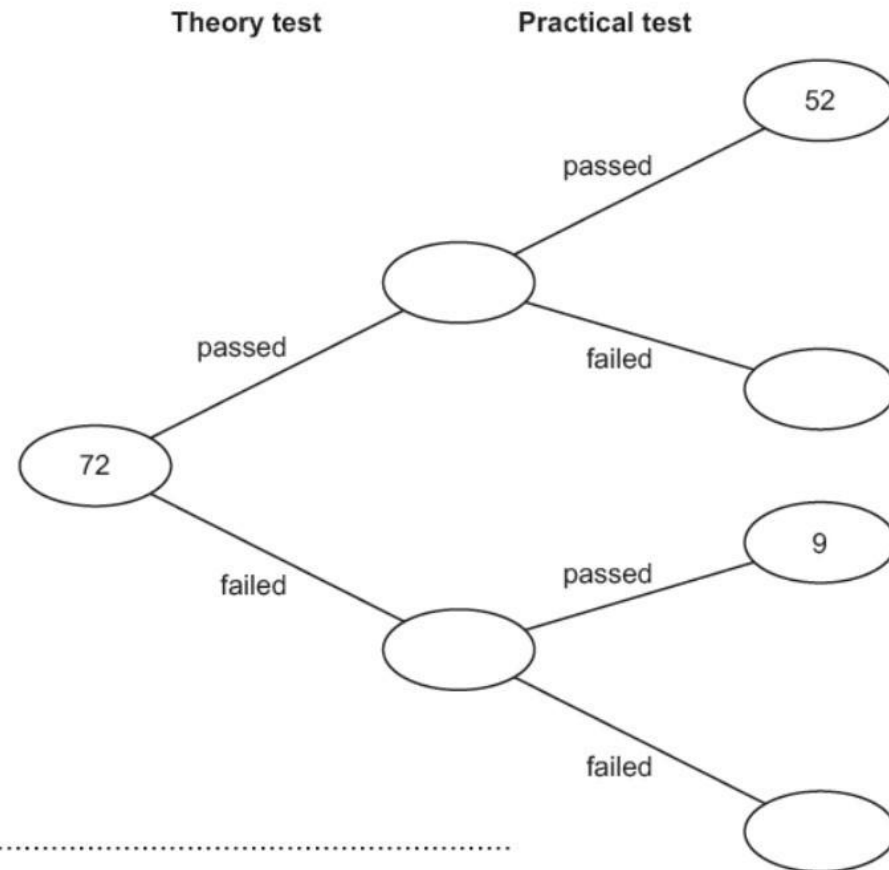
P30- Frequency Tree's

OCR

- 8 72 students each took a theory test followed by a practical test. They either passed or failed each test.

This frequency tree shows some of the results.

- (a) How many students passed both tests?
- (b) $\frac{5}{6}$ of the 72 students passed the theory test.
Complete the frequency tree.



- (c) Which test was passed by more students?
Explain your reasoning.

..... because

.....

..... [3]

- 8 72 students each took a theory test followed by a practical test. They either passed or failed each test.

This frequency tree shows some of the results.

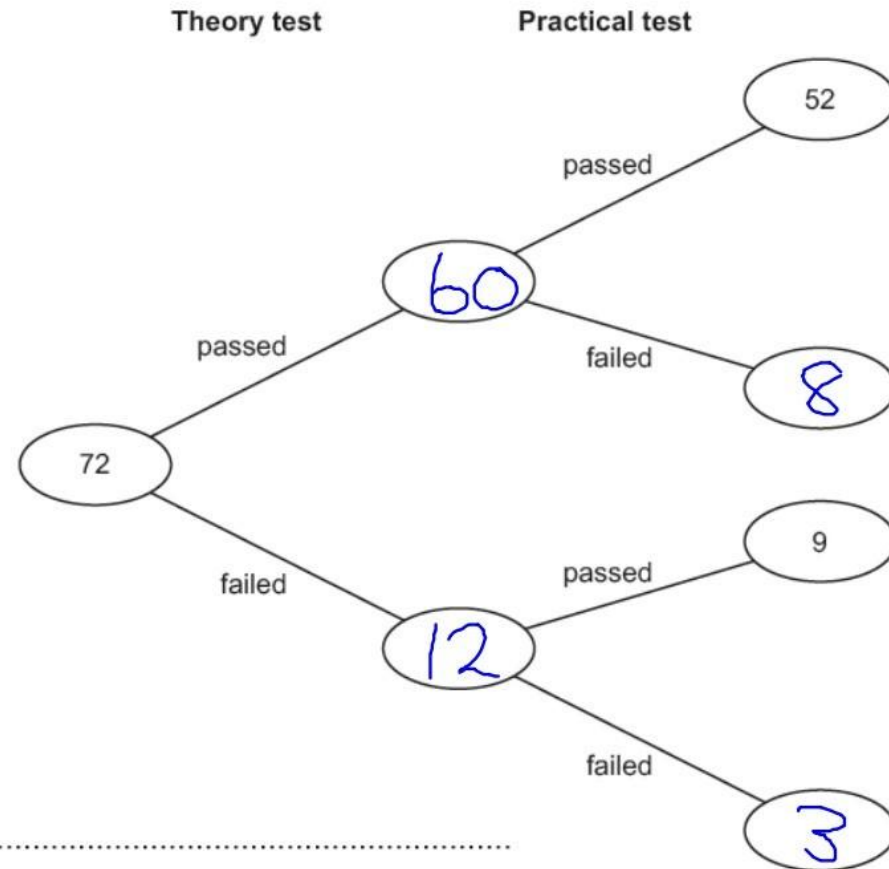
- (a) How many students passed both tests?

52 ✓

- (b) $\frac{5}{6}$ of the 72 students passed the theory test.

Complete the frequency tree.

$\frac{5}{6}$ of 72 = 60 passed theory



- (c) Which test was passed by more students?
Explain your reasoning.

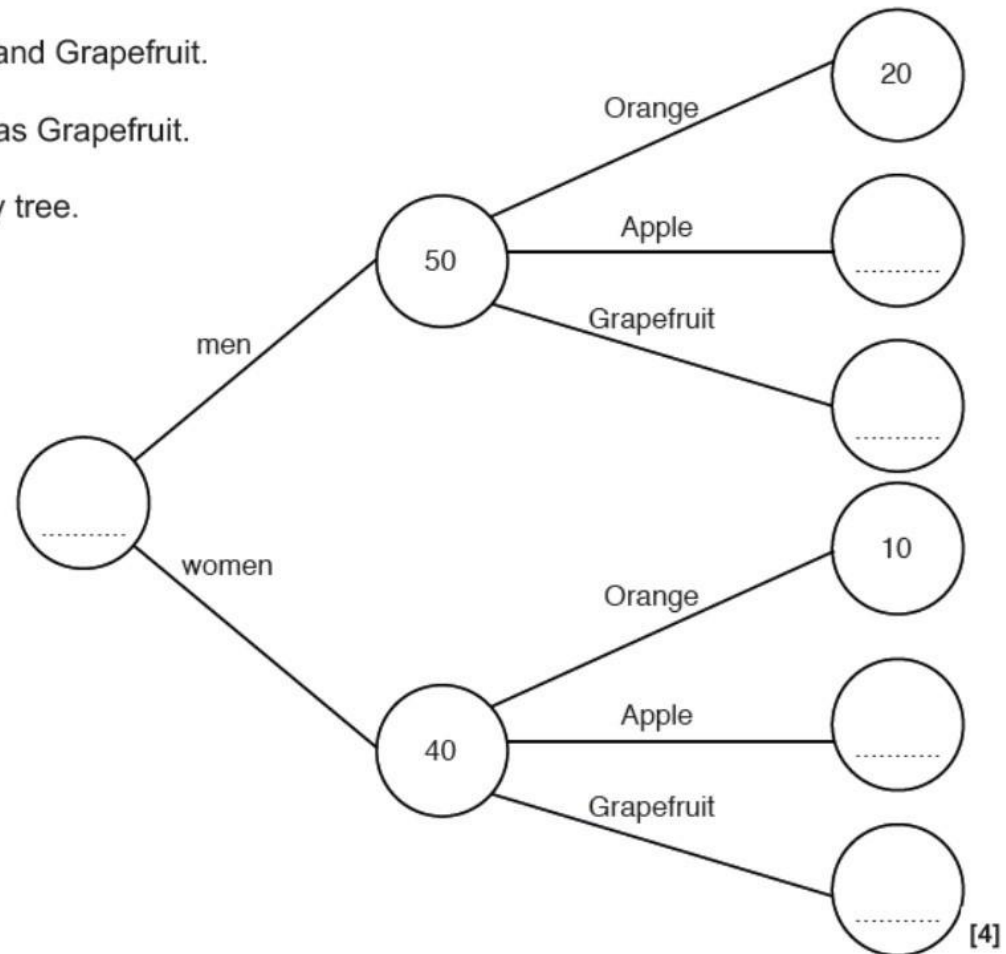
Theory = $\frac{60}{72}$ because

Practical = $\frac{61}{72}$ Practical was passed by more [3] as $\frac{61}{72} > \frac{60}{72}$

- 7 (a) A hotel manager asked some people to choose their favourite breakfast fruit juice. They each chose one from Orange, Apple or Grapefruit.

- 20 men chose Orange
- Equal numbers of men chose Apple and Grapefruit.
- 10 women chose Orange
- Twice as many women chose Apple as Grapefruit.

Use this information to complete the frequency tree.

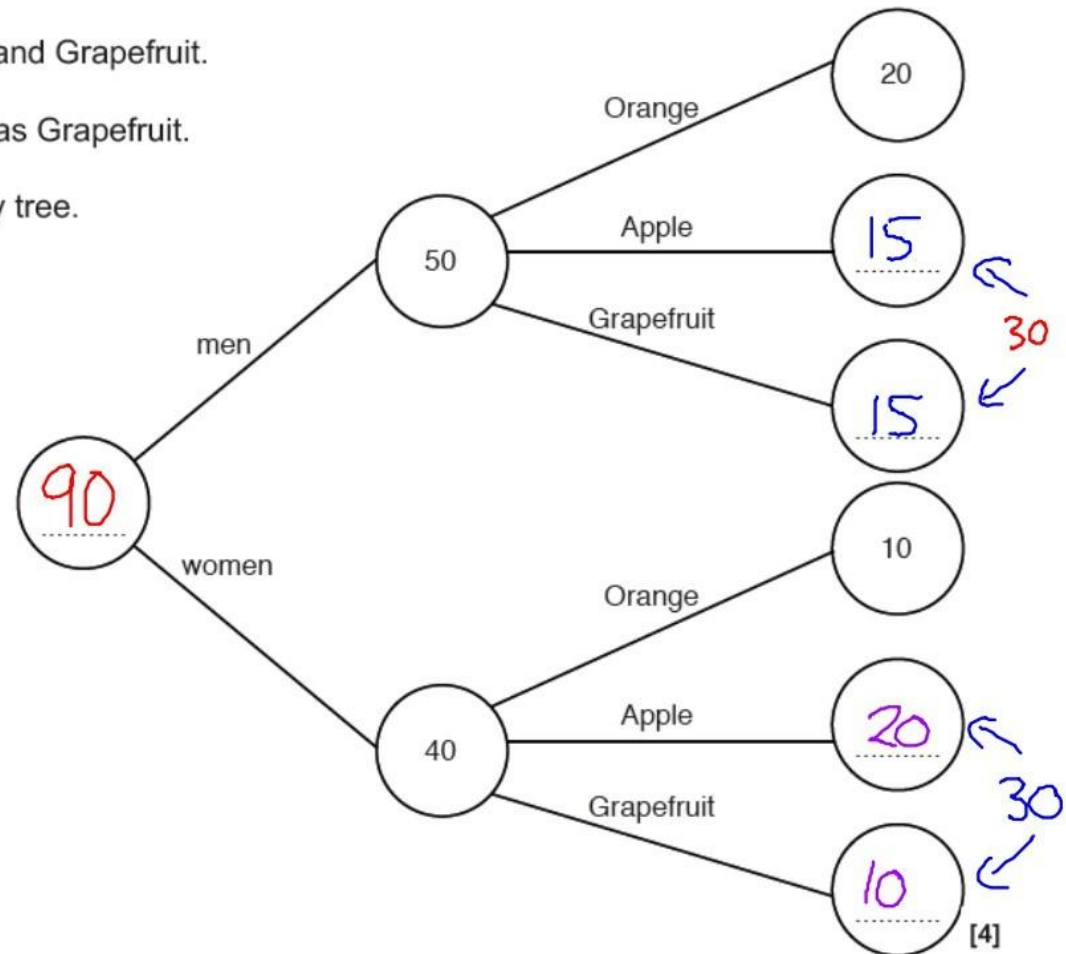


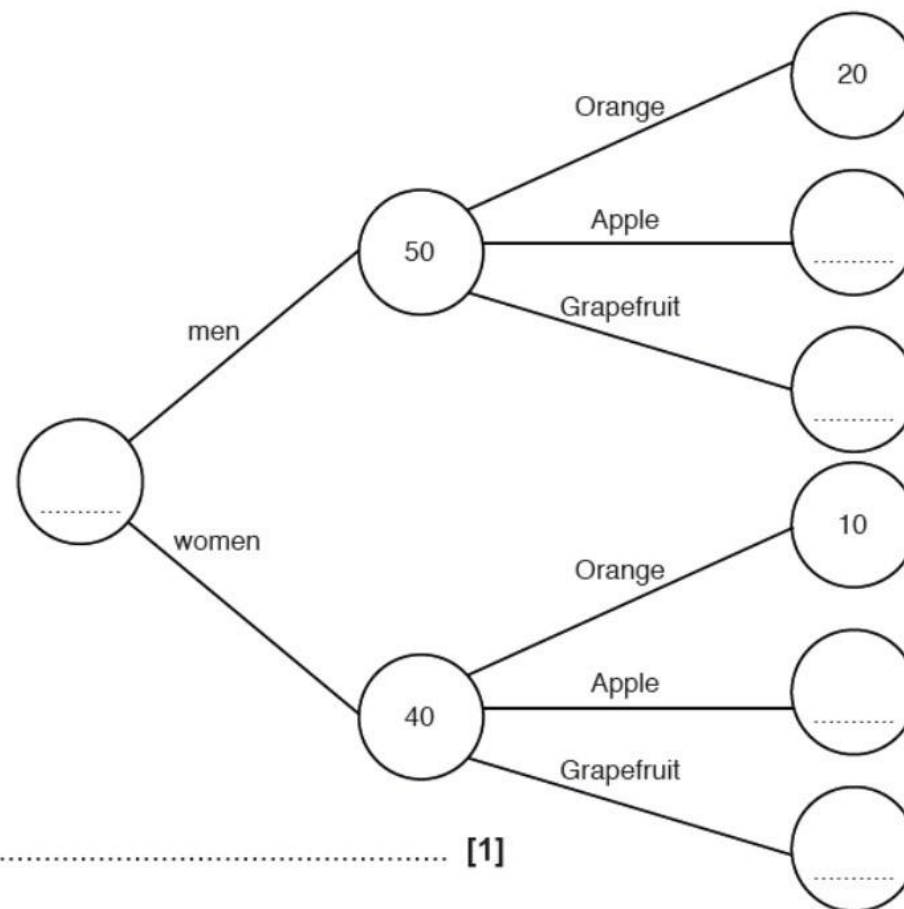
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- 20 men chose Orange
- Equal numbers of men chose Apple and Grapefruit.
- 10 women chose Orange
- Twice as many women chose Apple as Grapefruit.

Use this information to complete the frequency tree.

30 people 2 : 1
20 10
30 = 3 parts
10 = 1 part





(b) In one week 200 men have breakfast at the hotel.

(i) How many men may be expected to drink Orange?

(b)(i) [1]

(ii) Give one reason why the number of men who drink Orange in this week may be different to your answer to part **(b)(i)**.

.....

..... [1]

b) 20 men

$$\begin{array}{r} 20 \\ \times 4 \\ \hline 80 \\ 200 \end{array}$$

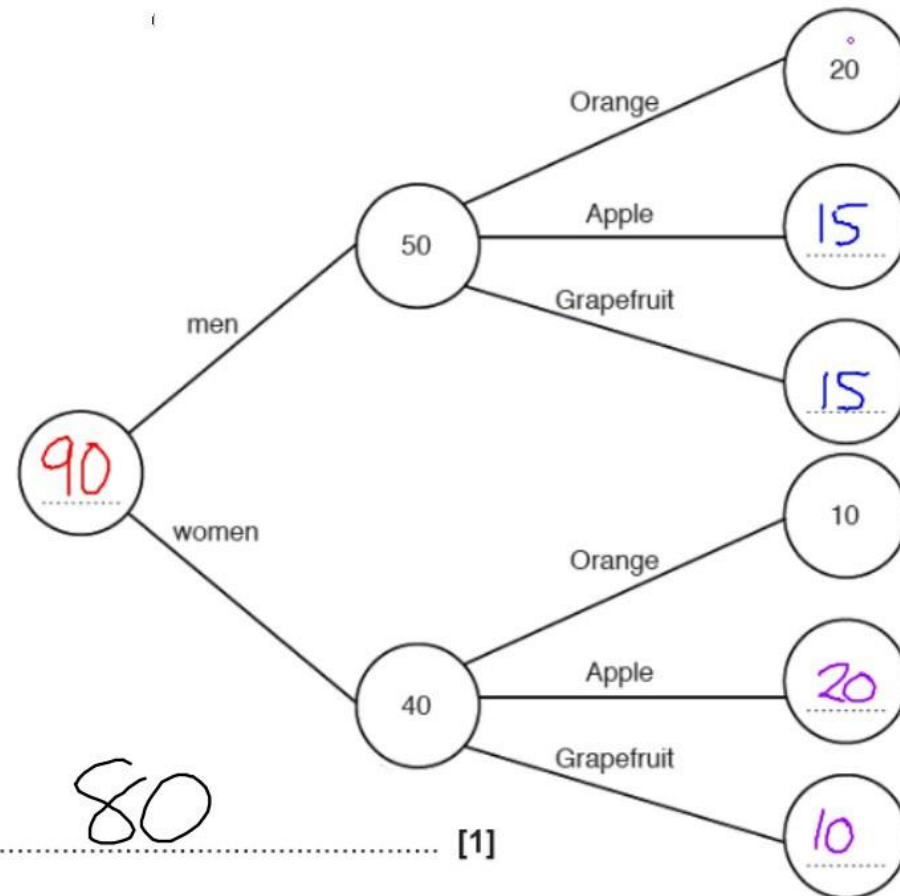
(b) In one week 200 men have breakfast at the hotel.

(i) How many men may be expected to drink Orange?

(b)(i) 80 [1]

(ii) Give one reason why the number of men who drink Orange in this week may be different to your answer to part (b)(i).

..... Likely to be different men [1]



P30

- 11 Megan's Cafe sells ice cream.
Customers choose to have a tub or a cone, and a wafer or no wafer.
They can choose vanilla, lemon or chocolate ice cream.

This frequency tree shows the number of people making some of the choices.

- (a) Anaya buys an ice cream.

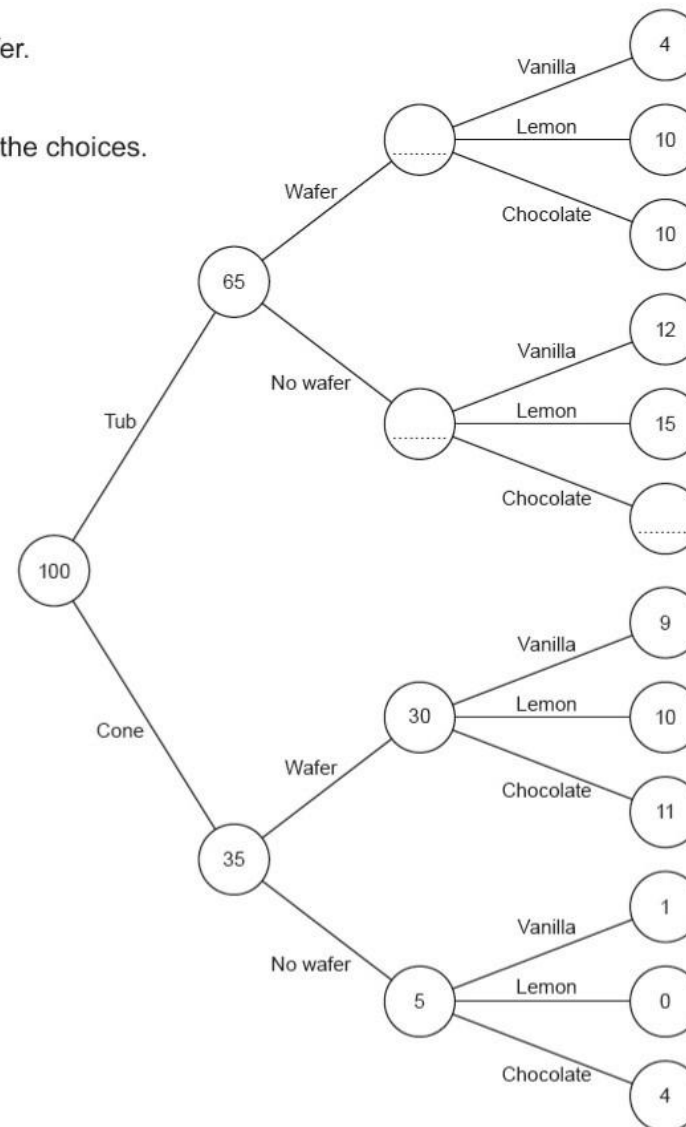
One choice she can make is

a cone, no wafer and vanilla.

How many different choices can she make?

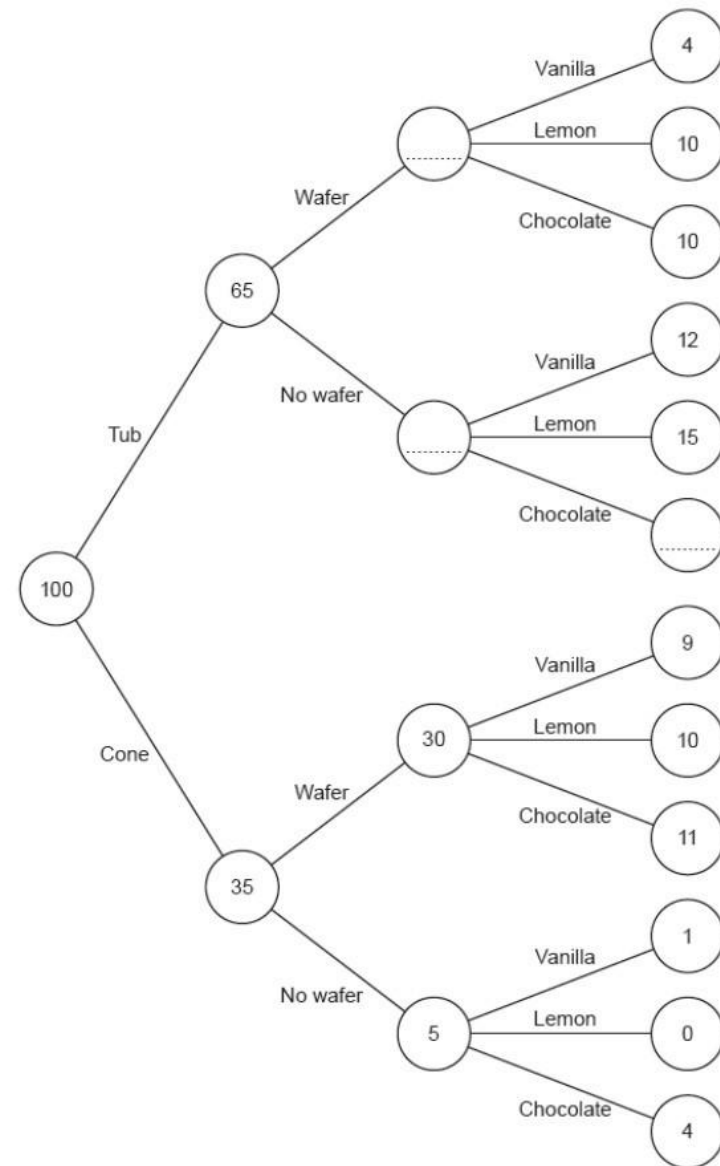
(a) [1]

- (b) Complete the frequency tree [2]



- (c) Which flavour of ice cream was most popular?
Show how you decide.

(c) [3]



P30

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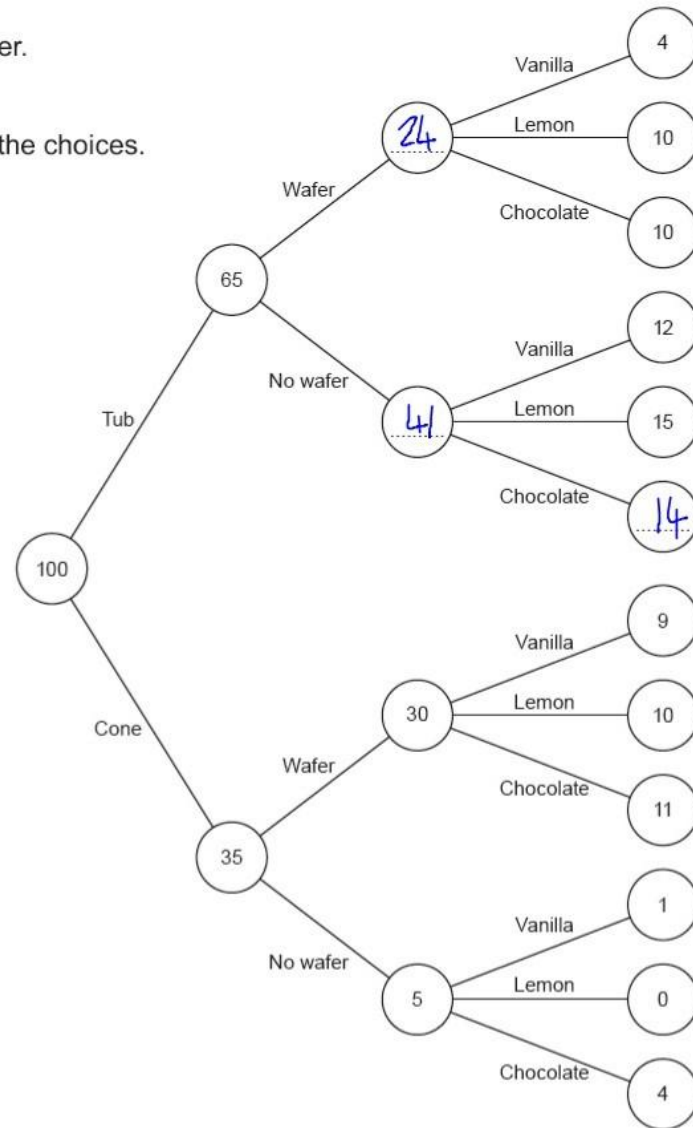
One choice she can make is

a cone, no wafer and vanilla.

How many different choices can she make?

(a) 12 [1]

- (b) Complete the frequency tree e [2]



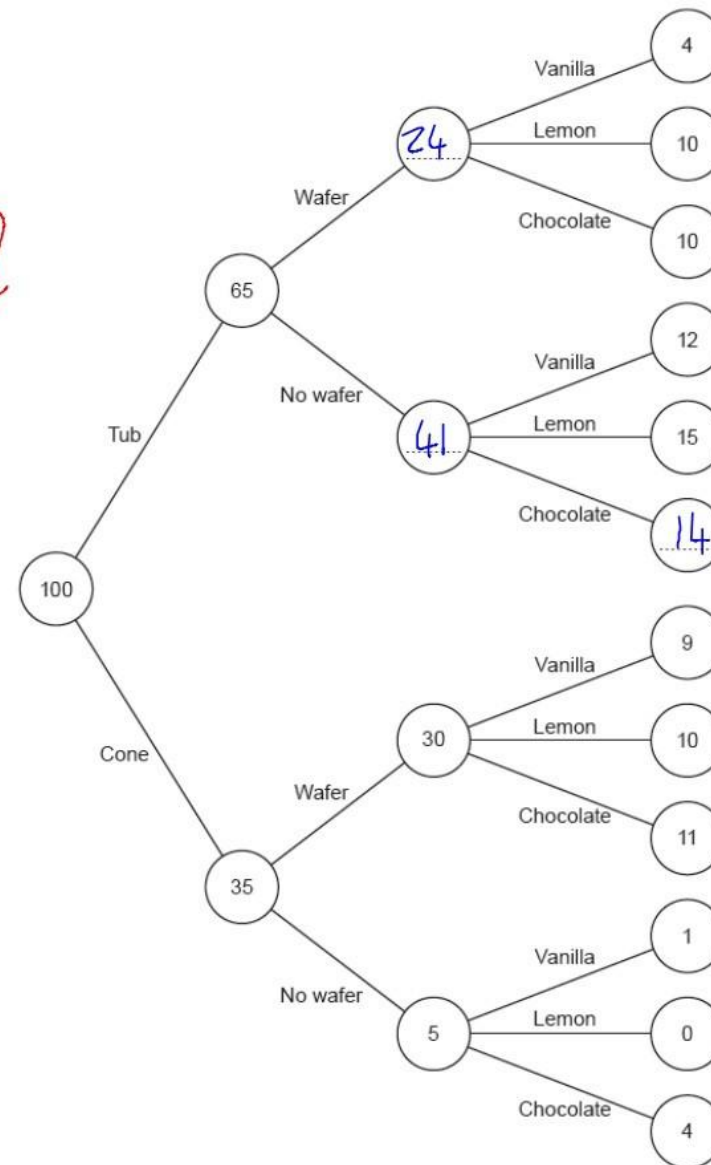
- (c) Which flavour of ice cream was most popular?
Show how you decide.

$$V = 4 + 12 + 9 + 1 = 26$$

$$L = 10 + 15 + 10 + 0 = 35$$

$$C = 10 + 14 + 11 + 4 = 39$$

(c) Chocolate [3]



Edexcel

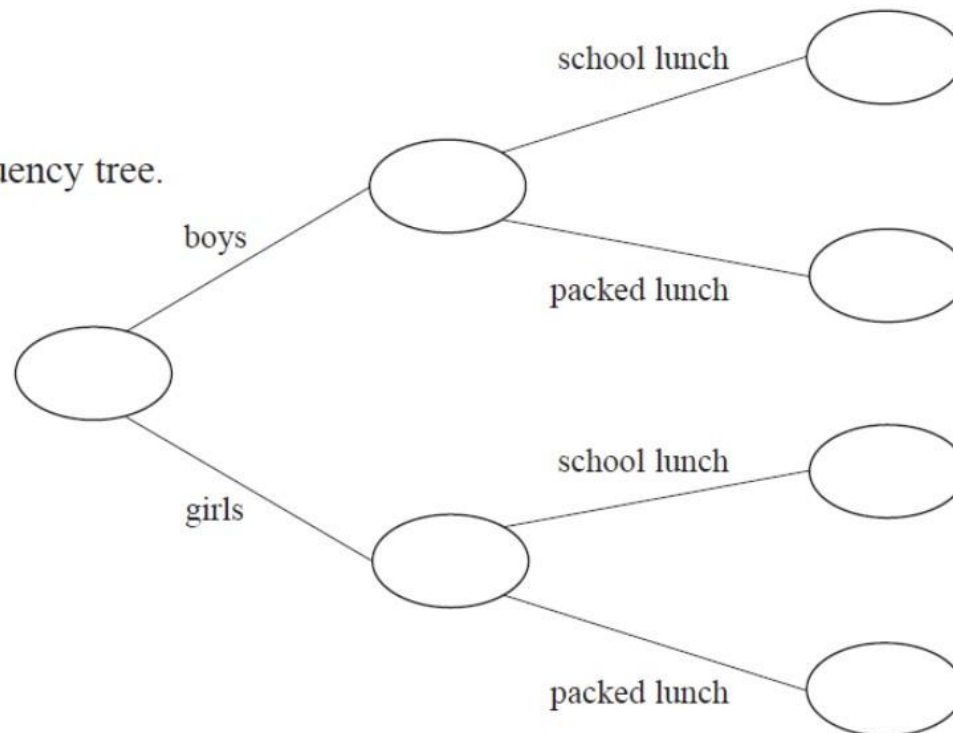
16 There are 60 children in Year 6
Each of these children has either a school lunch or a packed lunch.

P30 32 of the children are boys.

R4a $\frac{3}{4}$ of the boys have a school lunch.

$\frac{1}{2}$ of the girls have a packed lunch.

Use this information to complete the frequency tree.



(Total for Question 16 is 4 marks)

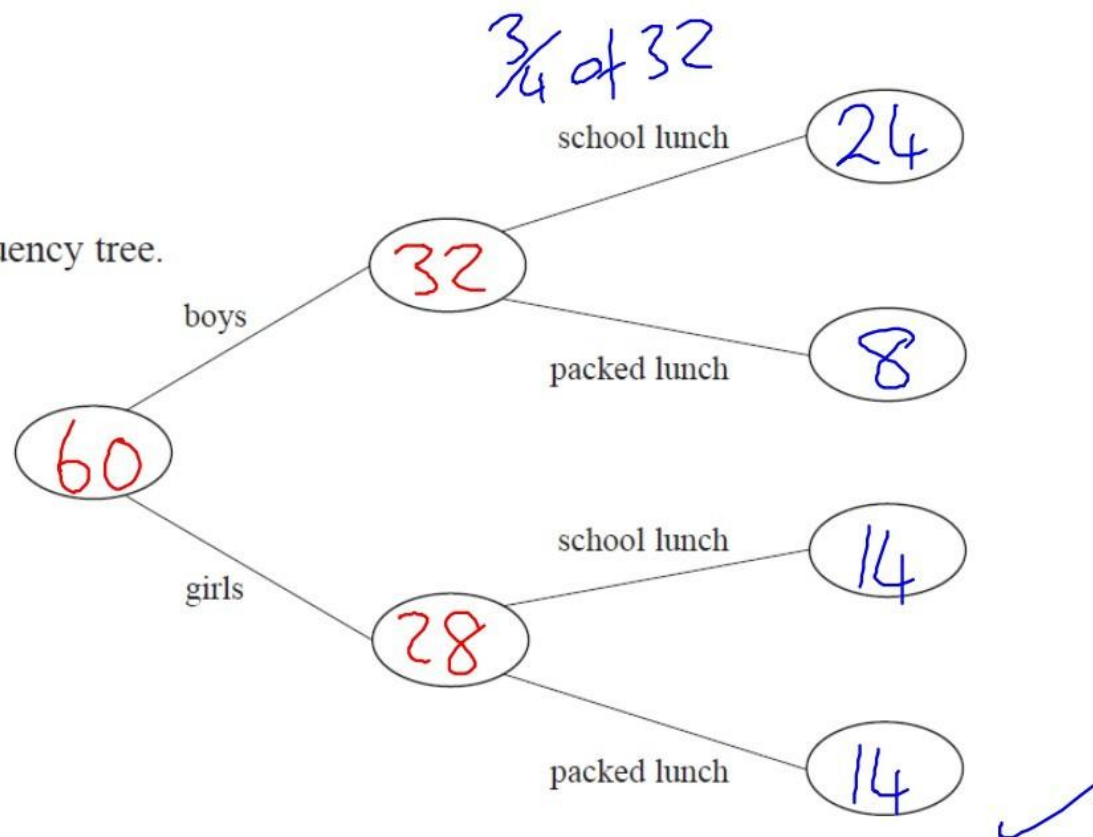
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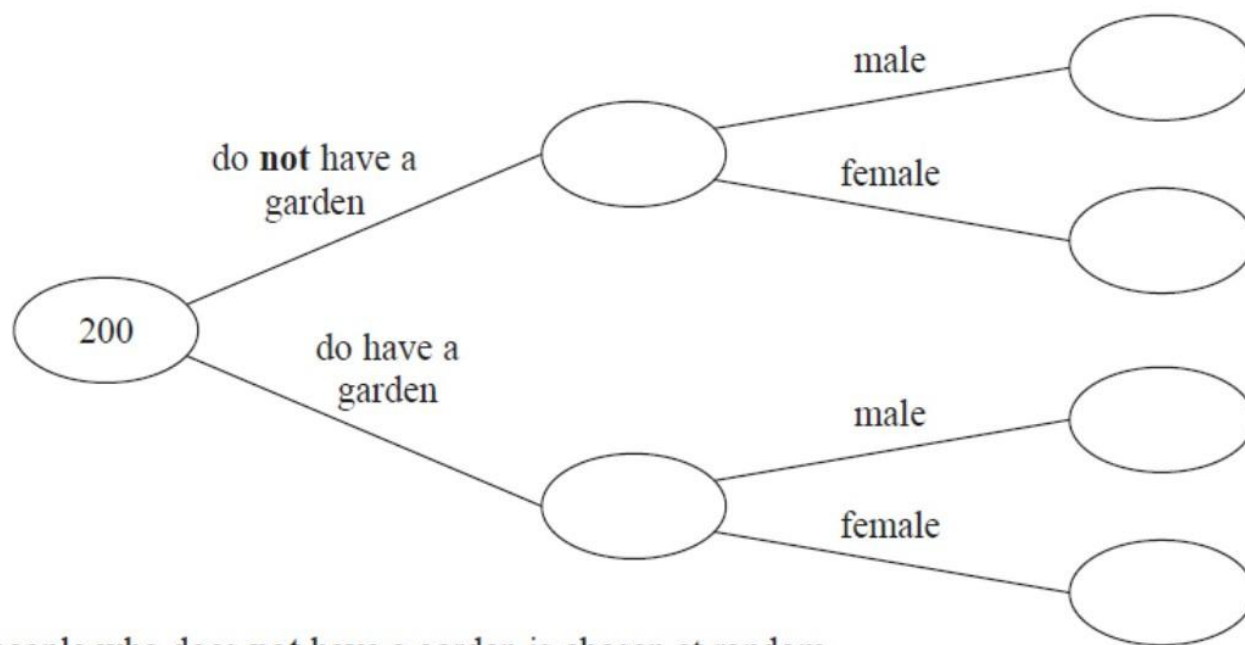
12 200 people live in a village.

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.



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

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

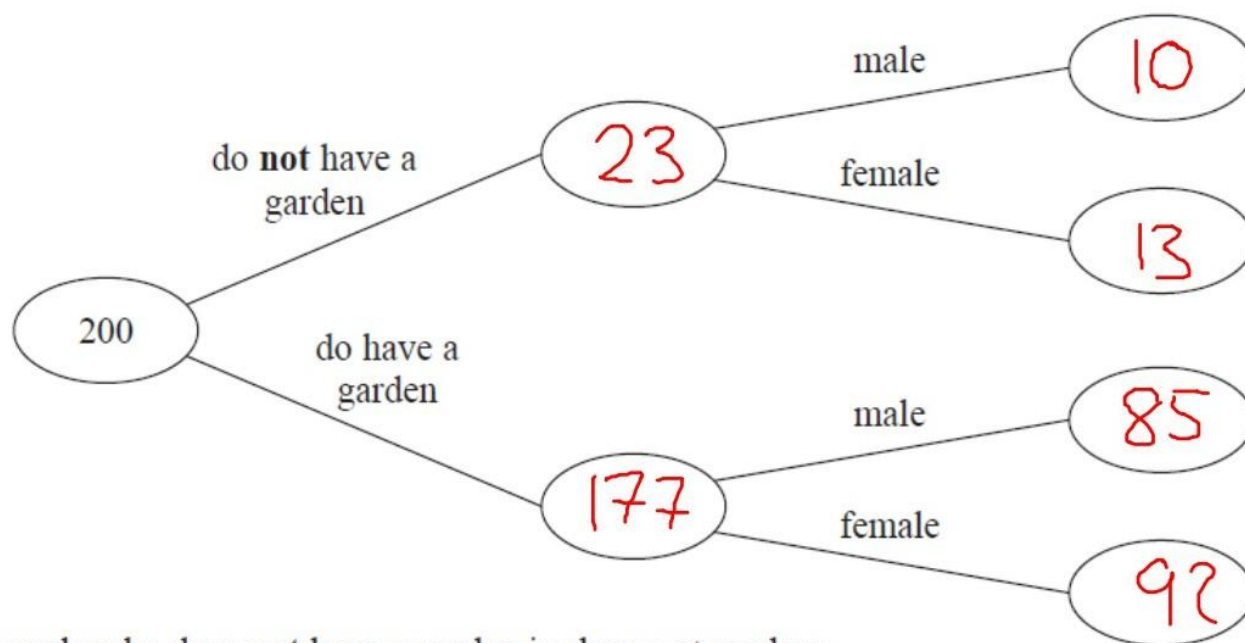
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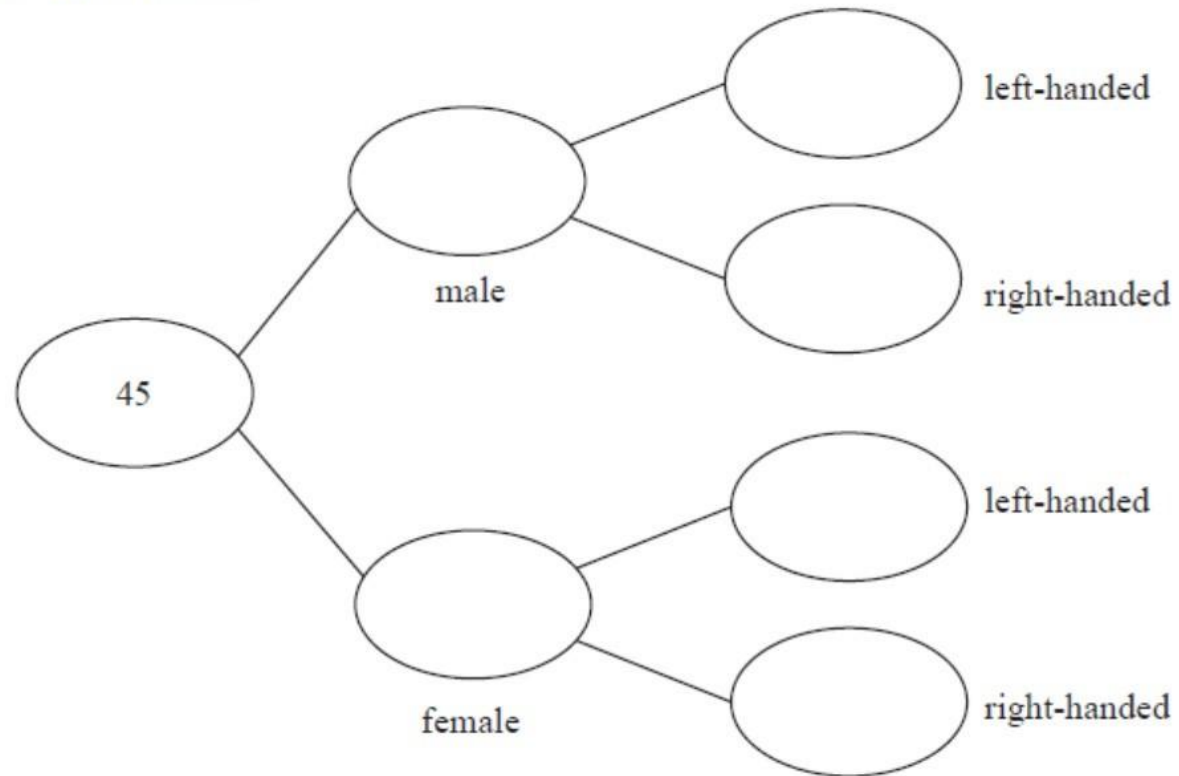
$$\frac{13}{23} \quad (2) \checkmark$$

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

P30 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)

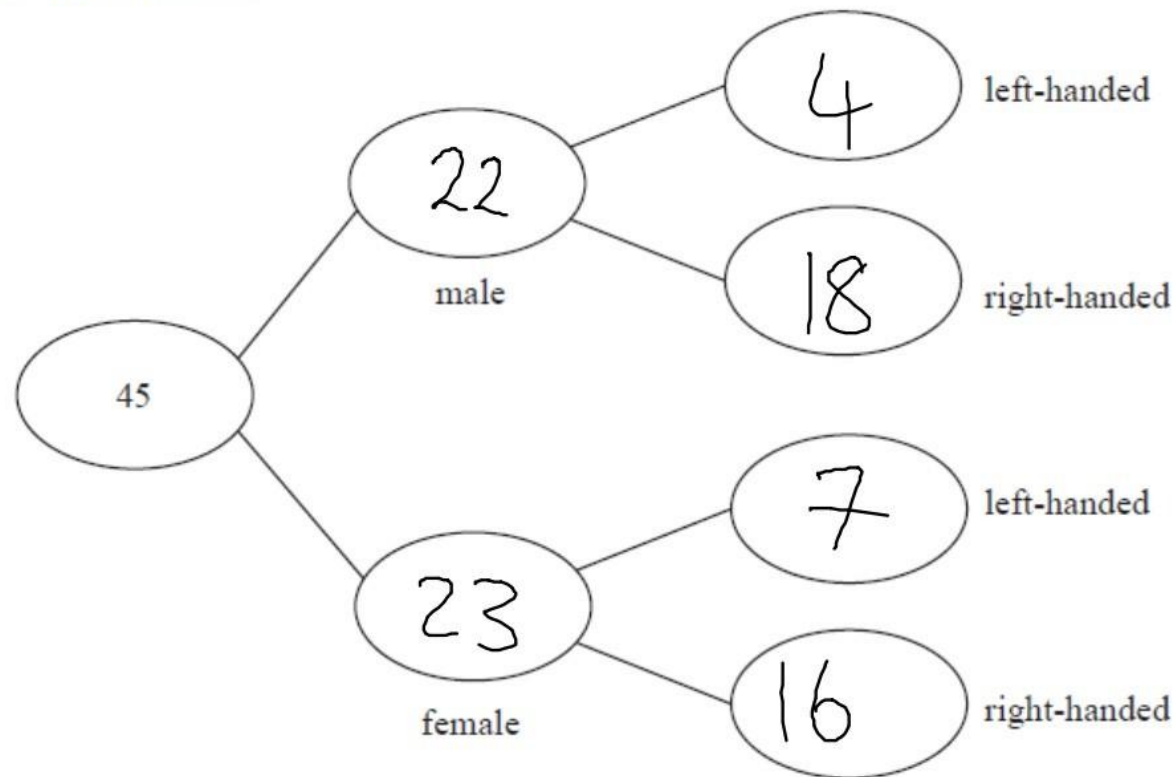
14 Each worker in a factory is either left-handed or right-handed.

P30 22 of the 45 workers are male.

16 of the 34 right-handed workers are female.

Complete the frequency tree for this information.

$$34 - 16 = 18$$

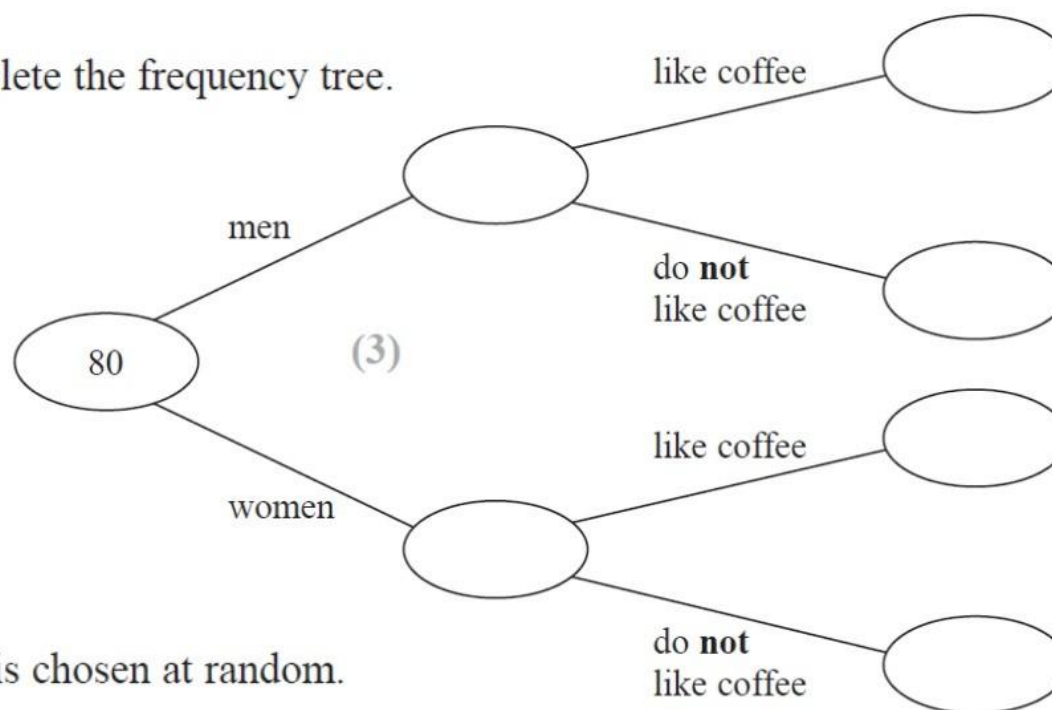


(Total for Question 14 is 3 marks)

17 80 people are asked if they like coffee.

P30 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.



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

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

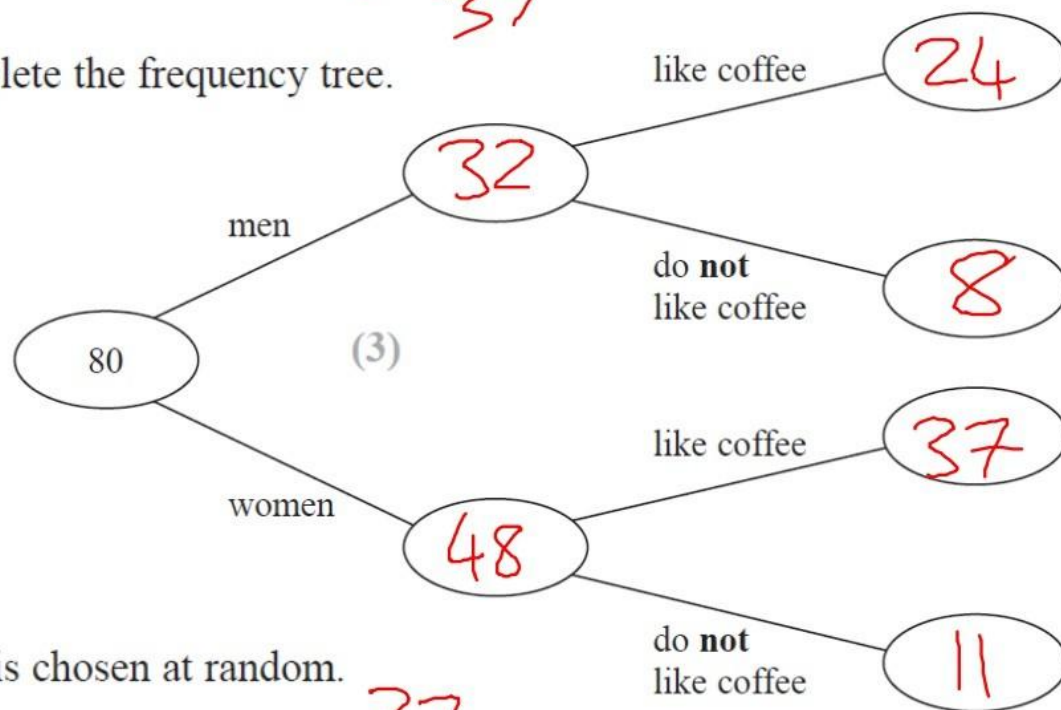
.....
(2)

(Total for Question 17 is 5 marks)

17 80 people are asked if they like coffee.

P30 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.



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

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

Handwritten calculation:

$$\frac{37}{61} \checkmark$$

(2)

(Total for Question 17 is 5 marks)

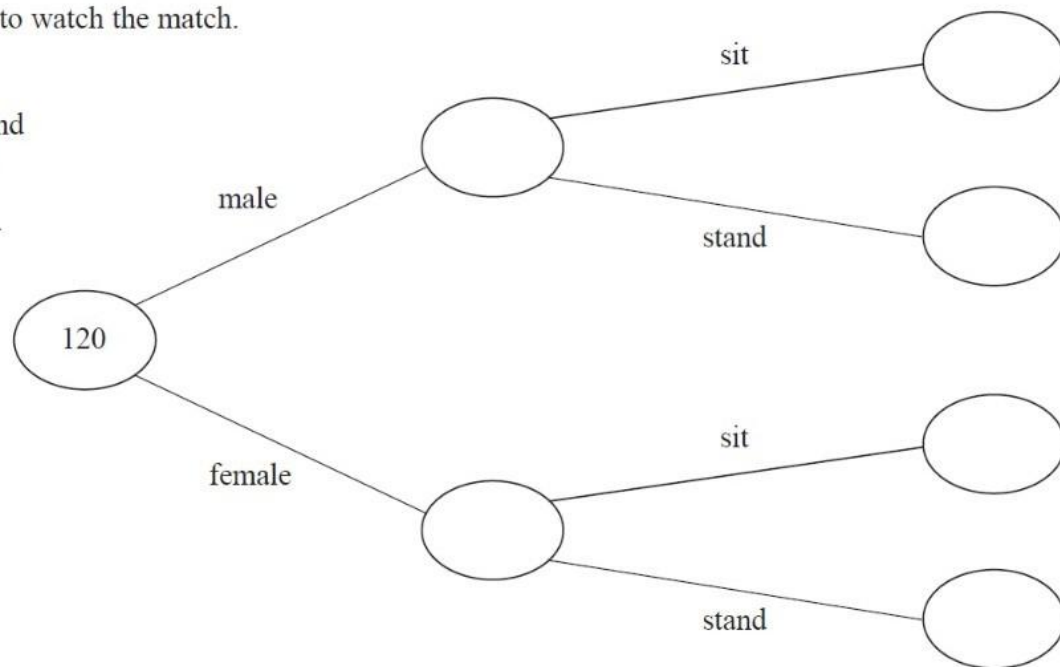
15 120 people were at a hockey match.

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

P30

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.



One of the 120 people is chosen at random.

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

(3)

(1)

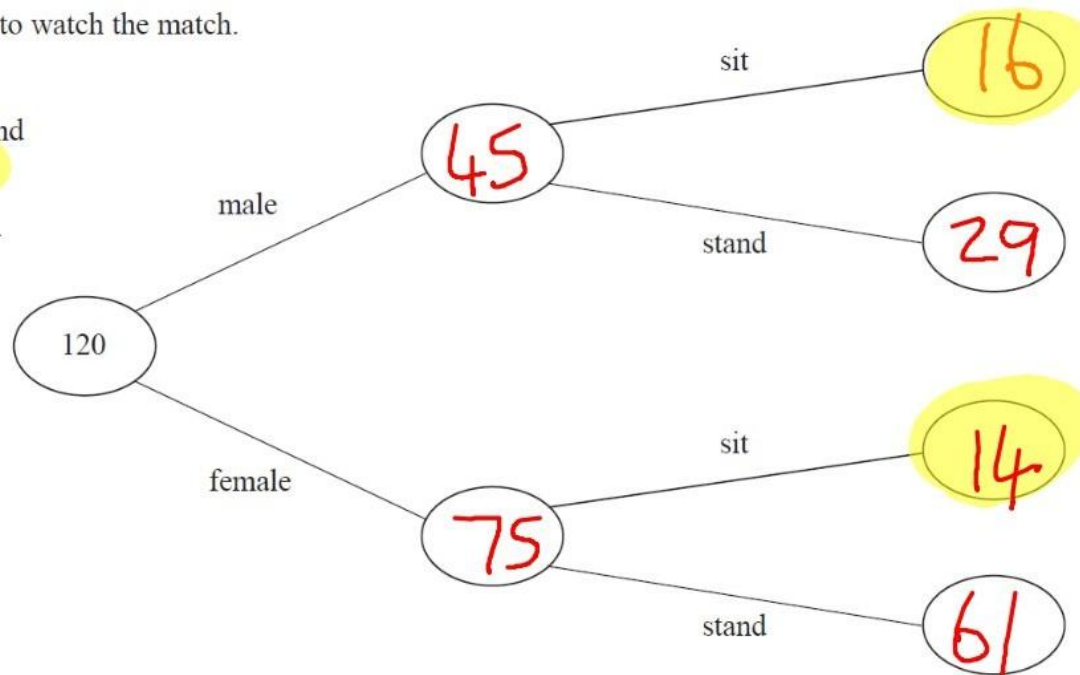
15 120 people were at a hockey match.

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

P30

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.



One of the 120 people is chosen at random.

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

$$\frac{29}{120}$$

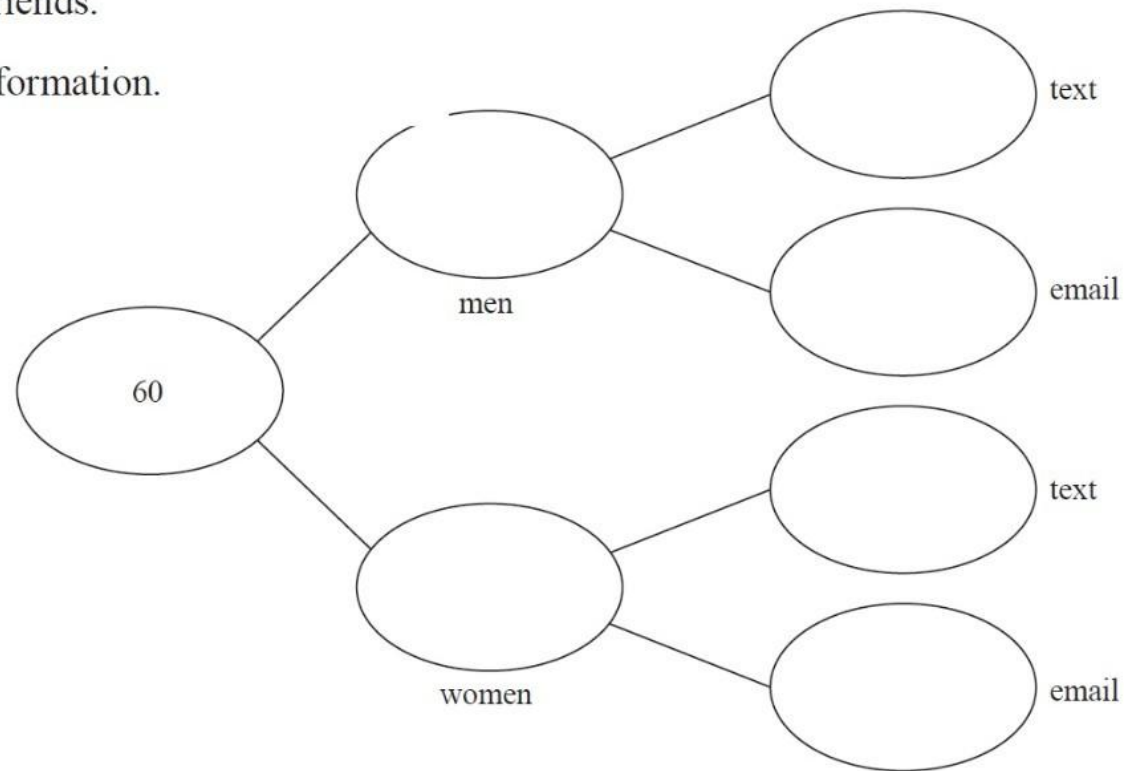
(1)

(3)

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

P30 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.



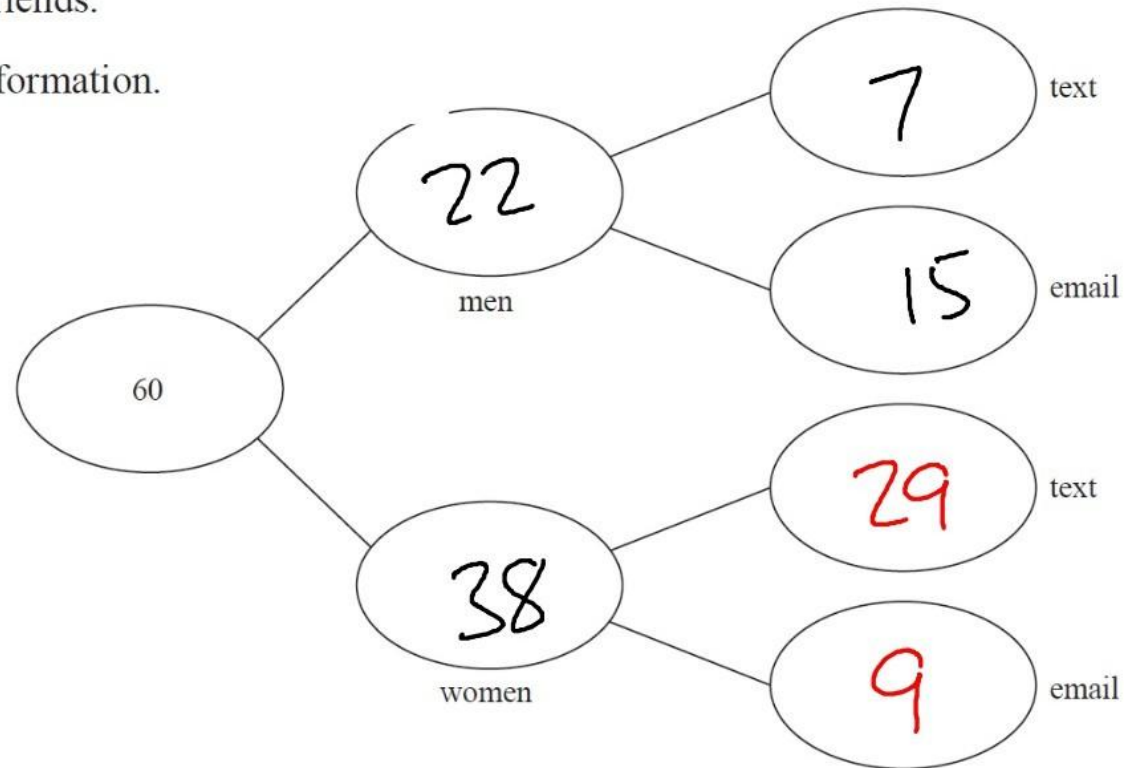
(Total for Question 17 is 5 marks)

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

P30 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.

60% of 60
= 36 text
 $36 - 7 = 29$



(Total for Question 17 is 5 marks)

AQA

6

500 people are asked if they drink coffee.

$\frac{9}{10}$ say Yes.

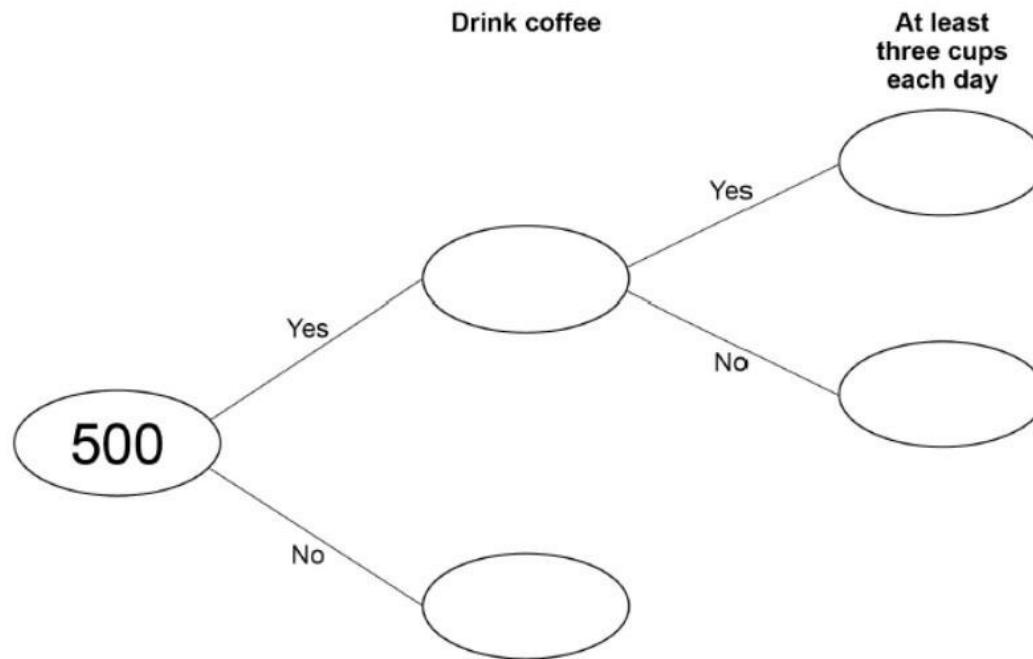
20% of the people who say Yes drink at least three cups each day.

6 (a)

Complete the frequency tree.

[4 marks]

R4a
R7
P30



6

500 people are asked if they drink coffee.

 $\frac{9}{10}$ say Yes.

20% of the people who say Yes drink at least three cups each day.

 $\frac{9}{10}$ of 500

$$500 \div 10 = 50$$

$$\frac{1}{10} = 50$$

[4 marks]

$$\frac{9}{10} = 450$$

20% of 450

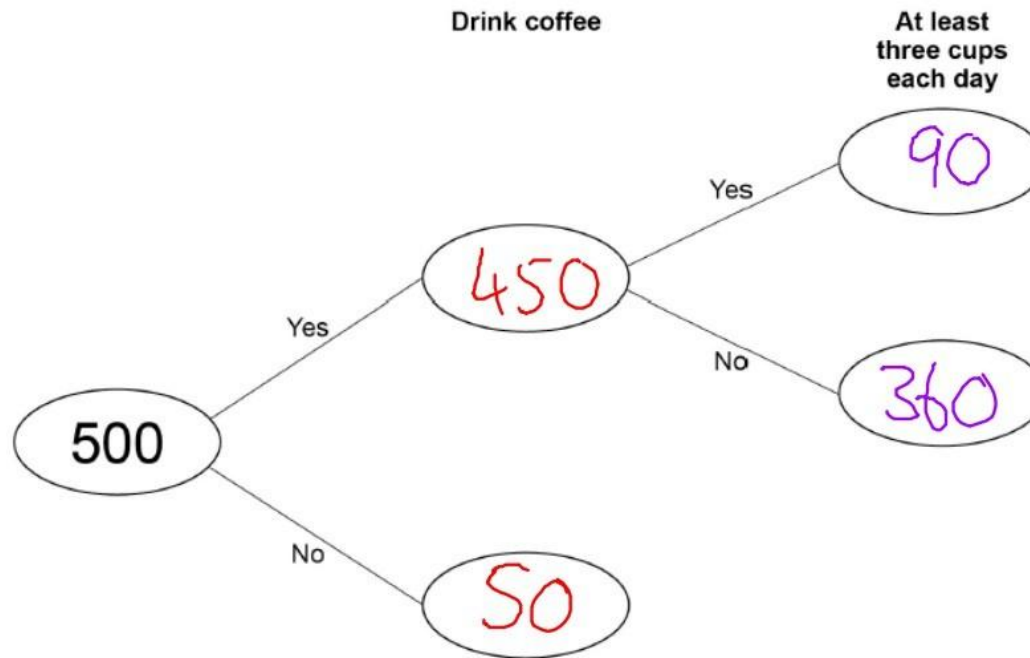
$$10\% = 45$$

$$20\% = 90$$

$$450 - 90 = 360$$

6 (a) Complete the frequency tree.

R4a
R7
P30



26

42 men and 38 women visit a restaurant.

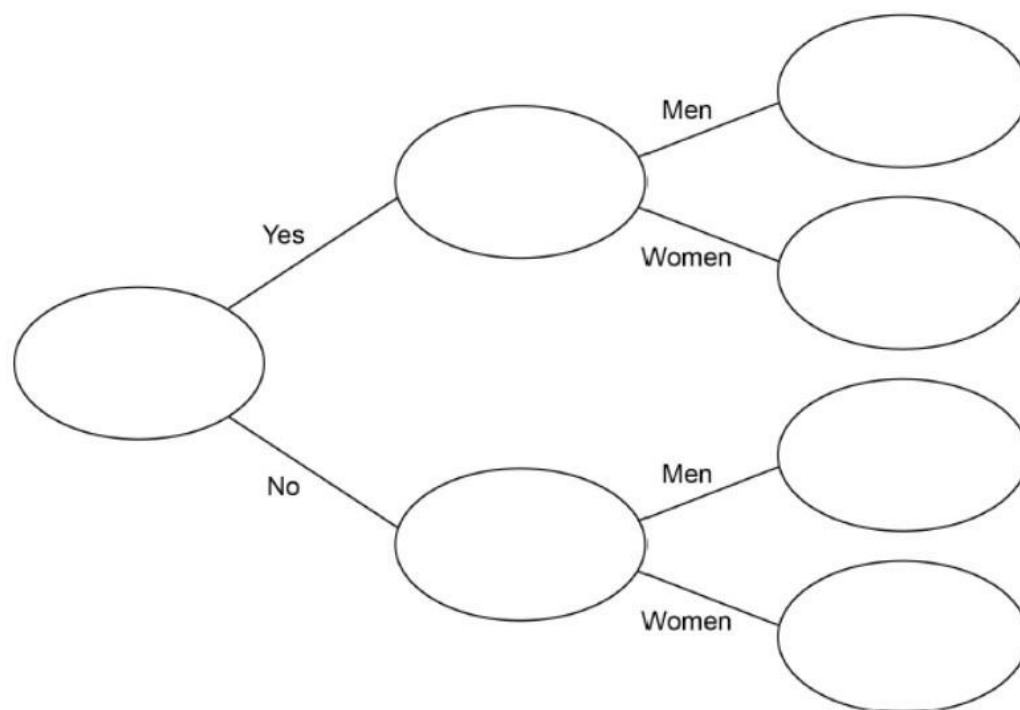
44 of these people have a voucher.

Three times as many men as women do **not** have a voucher.

26 (a) Complete the frequency tree.

[4 marks]

P30



26

42 men and 38 women visit a restaurant.

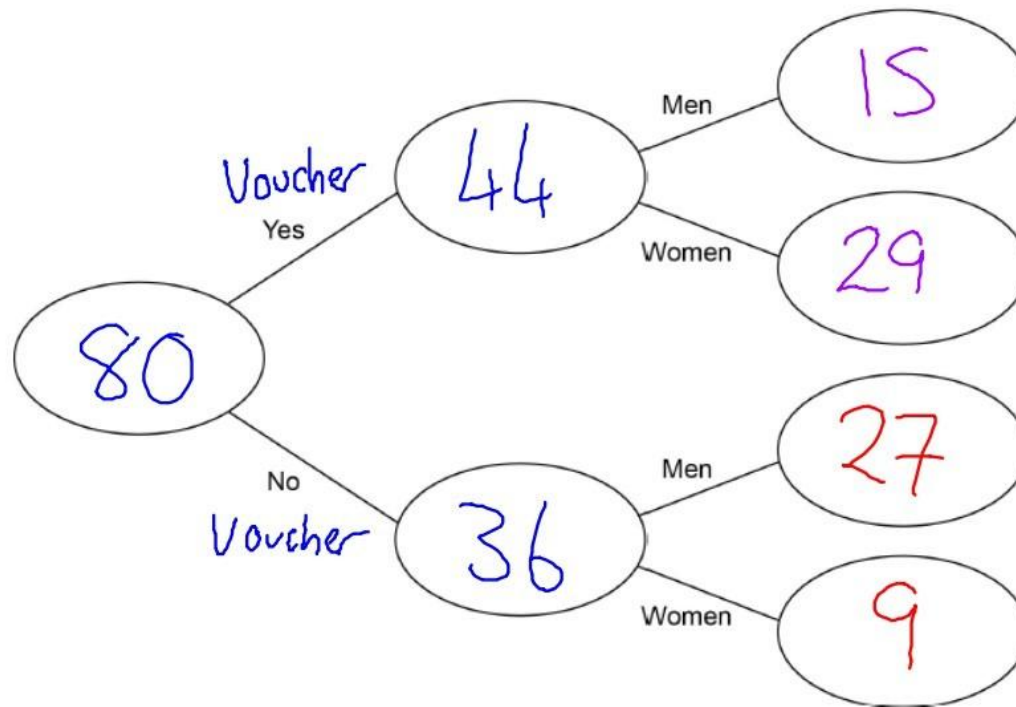
$$42 + 38 = 80$$

44 of these people have a voucher.

Three times as many men as women do **not** have a voucher.

(a) Complete the frequency tree.

P30



Total → 38 women
9 don't
29 do
[4 marks]

Total men → 42
27 no voucher
15 do

Men : Women
27 → 3 : 1 → 9
36 = 4 parts
9 = 1 part

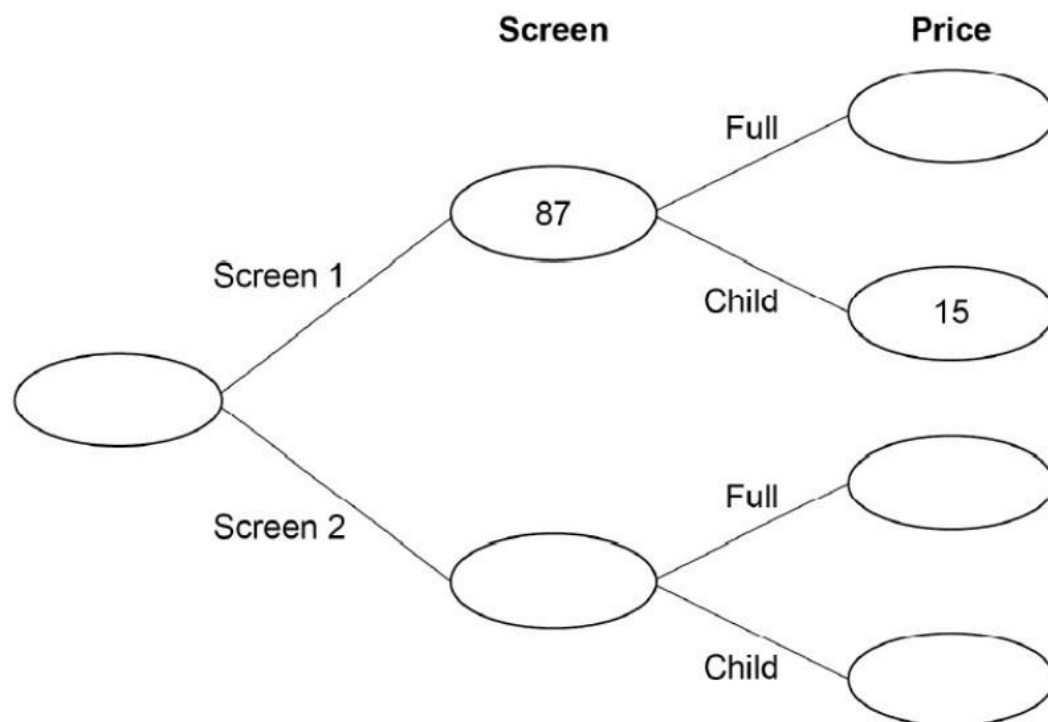
- 8 At a cinema, films are shown on Screen 1 and Screen 2
Customers pay full price or child price.

P30

There are three times as many customers in Screen 2 as Screen 1
68 customers paid child price.

Complete the frequency tree.

[5 marks]



- 8 At a cinema, films are shown on Screen 1 and Screen 2
Customers pay full price or child price.

P30

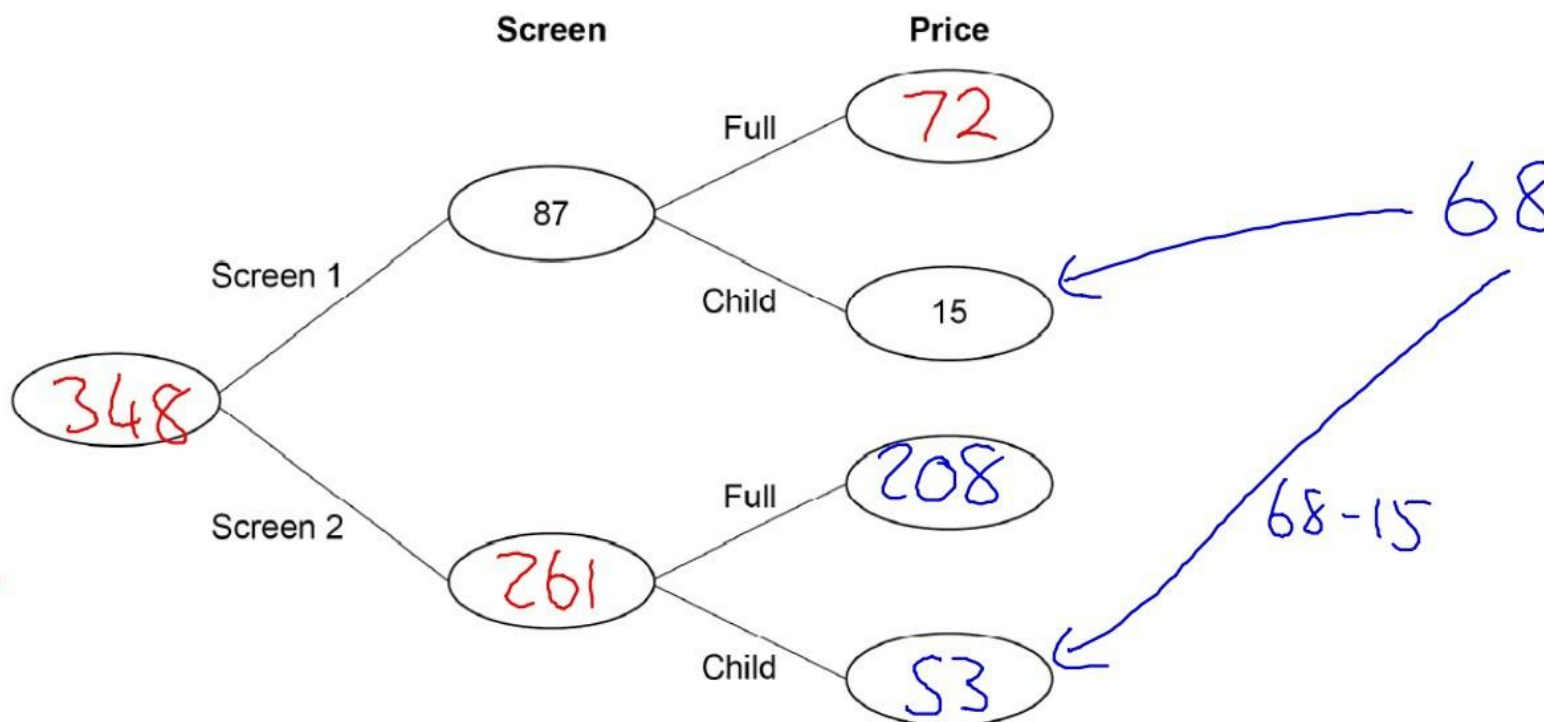
There are three times as many customers in Screen 2 as Screen 1

68 customers paid child price.

Complete the frequency tree.

$$\begin{array}{r} 261 \\ - 53 \\ \hline 208 \end{array}$$

[5 marks]



$$\begin{array}{r} 87 \\ \times 3 \\ \hline 261 \end{array}$$

$$\begin{array}{r} 261 \\ + 87 \\ \hline 348 \end{array}$$

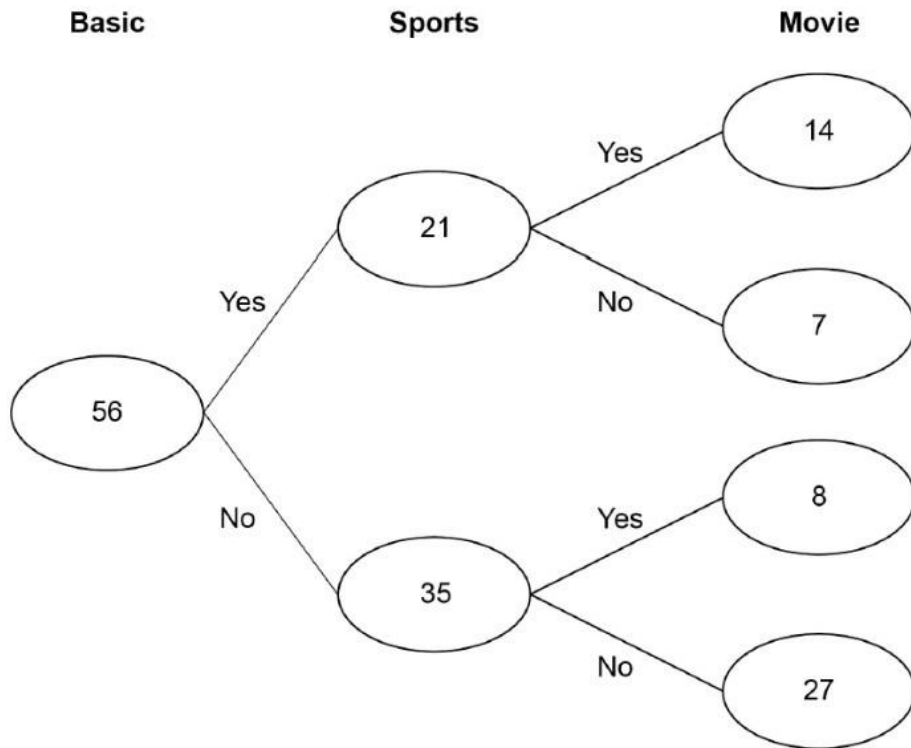
- 9 56 customers pay for satellite television.
They **all** have the Basic package for £24.50 per month.

Some also have

P30 the Sports package for £27.50 extra per month

N13 the Movie package for £18 extra per month.

The frequency tree shows the number of customers with each package.



In total, how much per month do the 56 customers pay?

[4 marks]

Answer £ _____

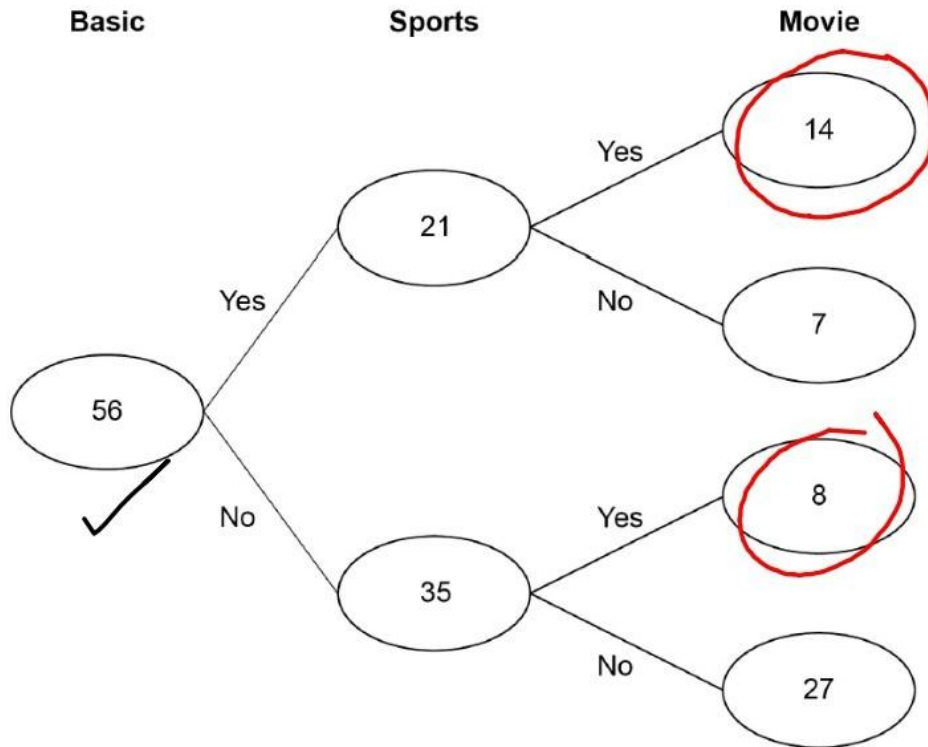
- 9 56 customers pay for satellite television.
They **all** have the Basic package for £24.50 per month.
Some also have
- P30** the Sports package for £27.50 extra per month
N13 the Movie package for £18 extra per month.

The frequency tree shows the number of customers with each package.

$$\text{Basic} \rightarrow 56 \times £24.50 = £1372$$

In total, how much per month do the 56 customers pay?

[4 marks]



$$\text{Sports} \rightarrow 21 \times £27.50 = £577.50$$

$$\text{Movies} = 22 \times £18 = £396$$

$$= \text{Total} =$$

Answer £ 2345.50 ✓

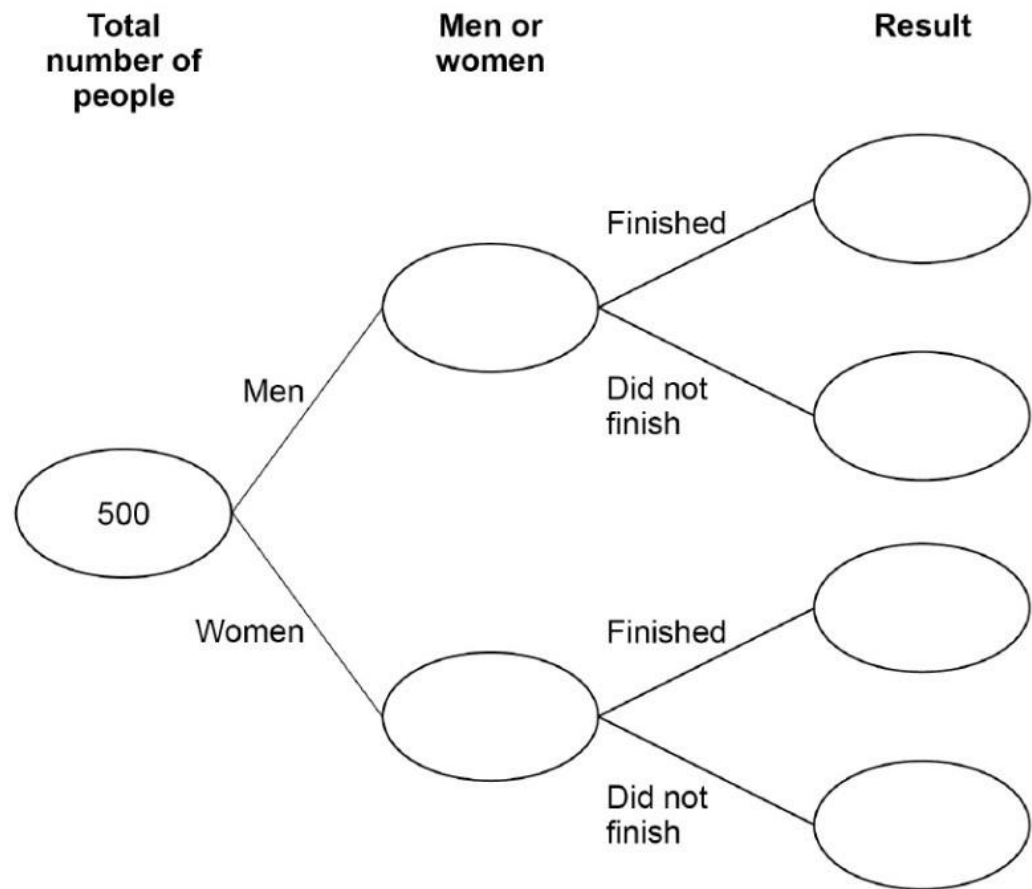
9 500 people started a race.

P30 280 were men and the rest were women.

R7 80% of the men finished the race.

30 women did **not** finish the race.

Complete the frequency tree. [5 marks]



9 500 people started a race.

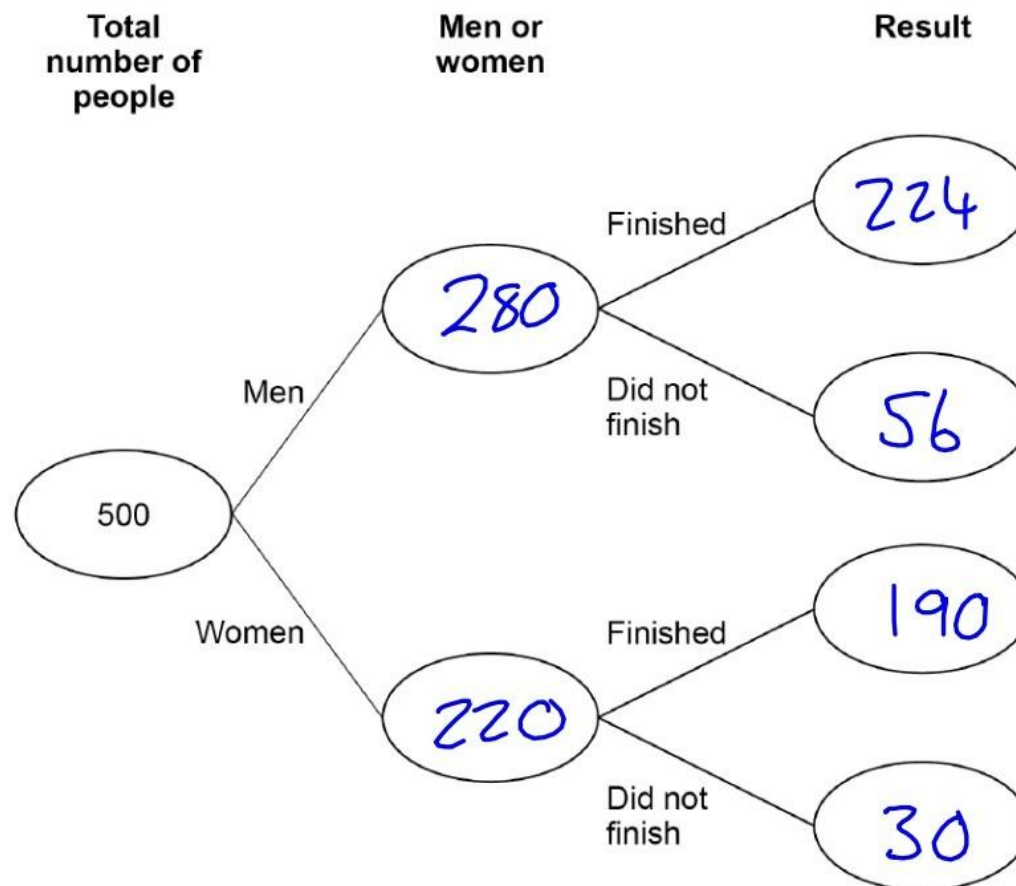
P30 280 were men and the rest were women.

R7 80% of the men finished the race.

30 women did **not** finish the race.

Complete the frequency tree. [5 marks]

$$80\% \text{ of } 280 = 224$$



12 A sports team played 40 games.

P30

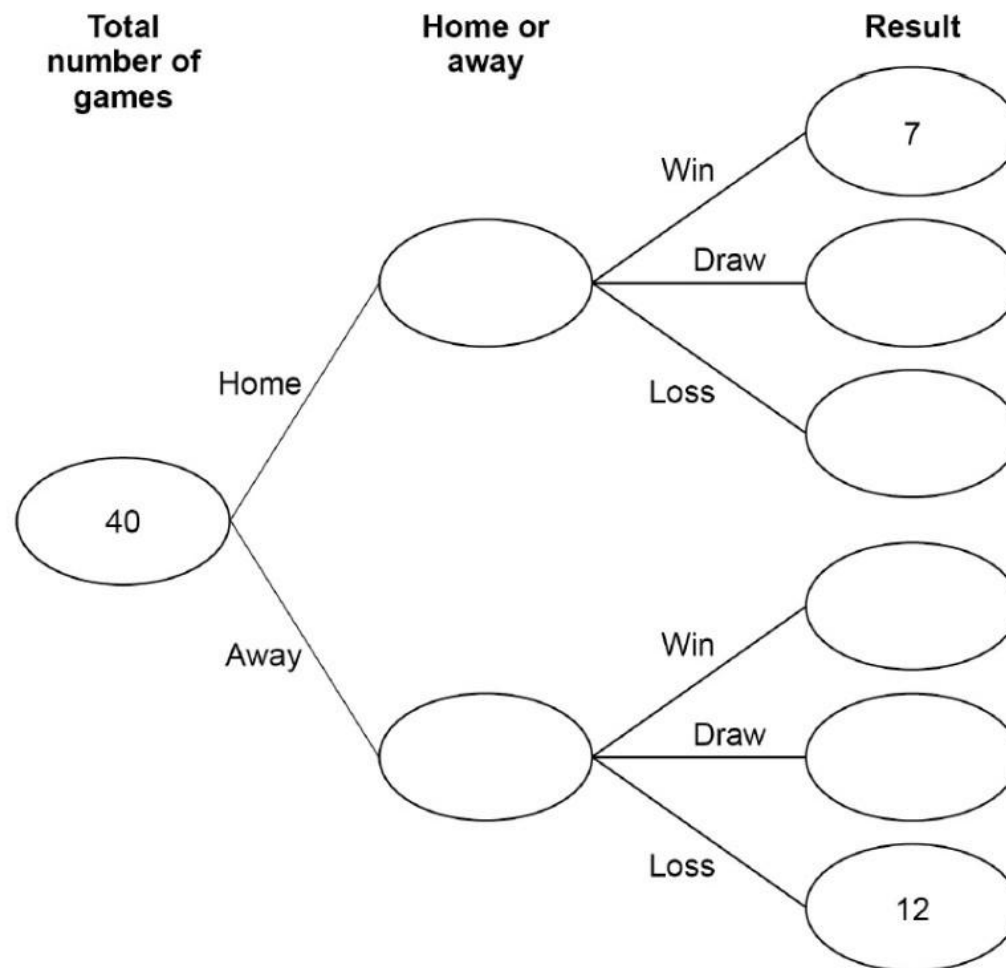
Half were home games and half were away games.

Each game was a win, a draw or a loss.

Of the **home** games, $\frac{2}{5}$ were losses.

Of the **away** games, $\frac{1}{10}$ were wins.

(a) Complete the frequency tree. [4 marks]



- (b) The team gets
- 6 points for a win
 - 3 points for a draw
 - 0 points for a loss.

Work out the **total** number of points that the team got.

[2 marks]

12 A sports team played 40 games.

P30

Half were home games and half were away games.

Each game was a win, a draw or a loss.

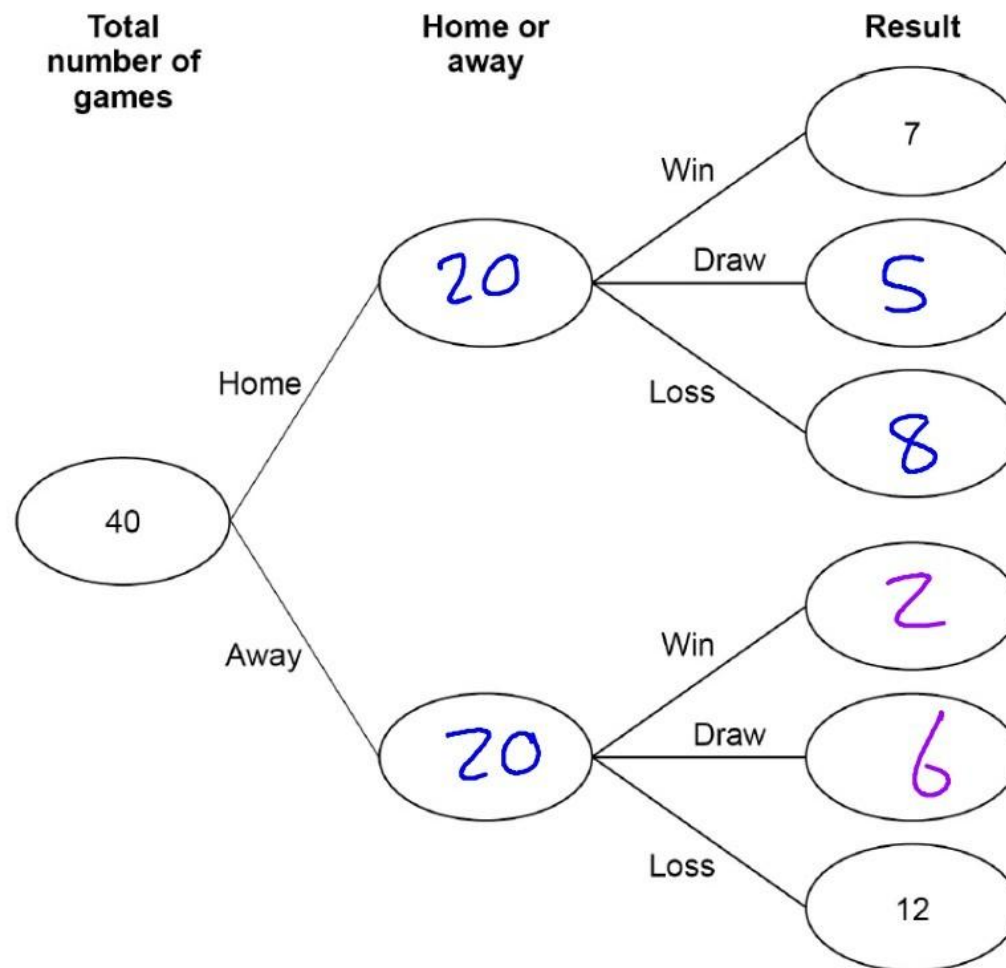
Of the **home** games, $\frac{2}{5}$ were losses.

Of the **away** games, $\frac{1}{10}$ were wins.

$$\frac{2}{5} \text{ of } 20 = 8$$

$$\frac{1}{10} \text{ of } 20 = 2$$

(a) Complete the frequency tree. [4 marks]



(b) The team gets

6 points for a win

3 points for a draw

0 points for a loss.

Work out the **total** number of points that the team got.

[2 marks]

$$\begin{array}{r} 9 \text{ wins} \times 6 = 54 \text{ points} \\ 11 \text{ draws} \times 3 = 33 \text{ points} \\ \hline 87 \text{ points} \end{array}$$