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Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

I declare this is my own work.

GCSE STATISTICS

F

Foundation Tier Paper 2

Friday 13 June 2025

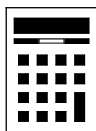
Afternoon

Time allowed: 1 hour 45 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments.



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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross out any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

For Examiner's Use

Question	Mark
1	
2	
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TOTAL	



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Answer **all** questions in the spaces provided.

- 1** Here are data about the favourite sports of 12 people.

Football	Rugby	Hockey	Rugby
Other	Football	Other	Football
Hockey	Rugby	Rugby	Rugby

- 1 (a)** Write down the sport that is the mode.

[1 mark]

Answer _____

- 1 (b)** Explain why the mode is an appropriate average to use for these data.

[1 mark]

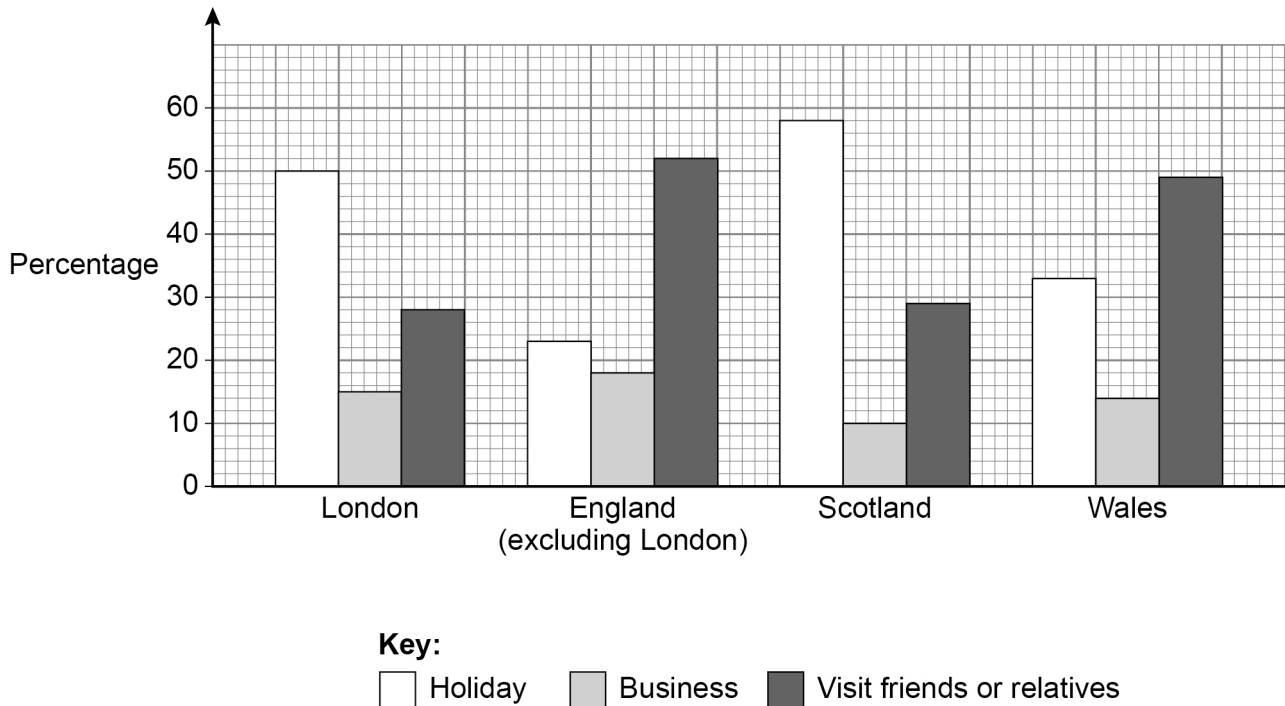
- 1 (c)** Name a suitable diagram to represent these data.

[1 mark]

Answer _____



- 2** The following graph represents the most common reasons for overnight stays in some parts of the UK in 2022.



Source: ons.gov.uk

- 2 (a)** Here is a statement.

'In 2022, Scotland had the greatest proportion of overnight stays for holiday compared to other parts of the UK shown on the graph.'

How does the graph support this statement?

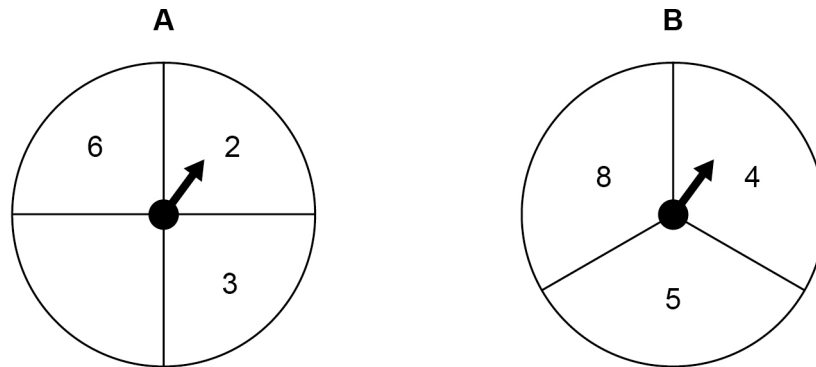
[1 mark]

- 2 (b)** Using the graph, write down a different statement that you can make about Scotland.

[1 mark]



- 3** **A** and **B** are fair spinners.
Each sector of the spinners has a number from 1 to 9
One number is missing.



Both spinners are spun.
The outcome is the **sum** of the two numbers.
The sample space shows the outcomes.

		Spinner A			
		6	2		3
Spinner B	8	14	10	15	11
	4	10	6	11	7
	5	11	7	12	8

- 3 (a)** Complete the table.

[1 mark]

- 3 (b)** Write down the **total** number of outcomes.

[1 mark]

Answer _____



3 (c) Write down the number of **different** outcomes.

[1 mark]

Answer _____

*Do not write
outside the
box*

3

Turn over for the next question



4 Evie and Gina run races.

Here are Evie's race times, to the nearest minute, for her last 7 races.

19 15 23 20 15 26 18

Gina's race times for the same 7 races have,

mean = 21 minutes

range = 8 minutes.

4 (a) (i) Work out who has the **greater mean** race time.

Tick (✓) a box.

Evie

☐

Gina

☐

Show working to support your answer.

[2 marks]

4 (a) (ii) Explain what your answer in part **(a)(i)** means in context.

[1 mark]



4 (b) (i) Work out whose race times have a **greater range**.

Tick (✓) a box.

Evie

☐

Gina

☐

Show working to support your answer.

[1 mark]

4 (b) (ii) Explain what your answer in part **(b)(i)** means in context.

[1 mark]

5

Turn over for the next question

Turn over ►



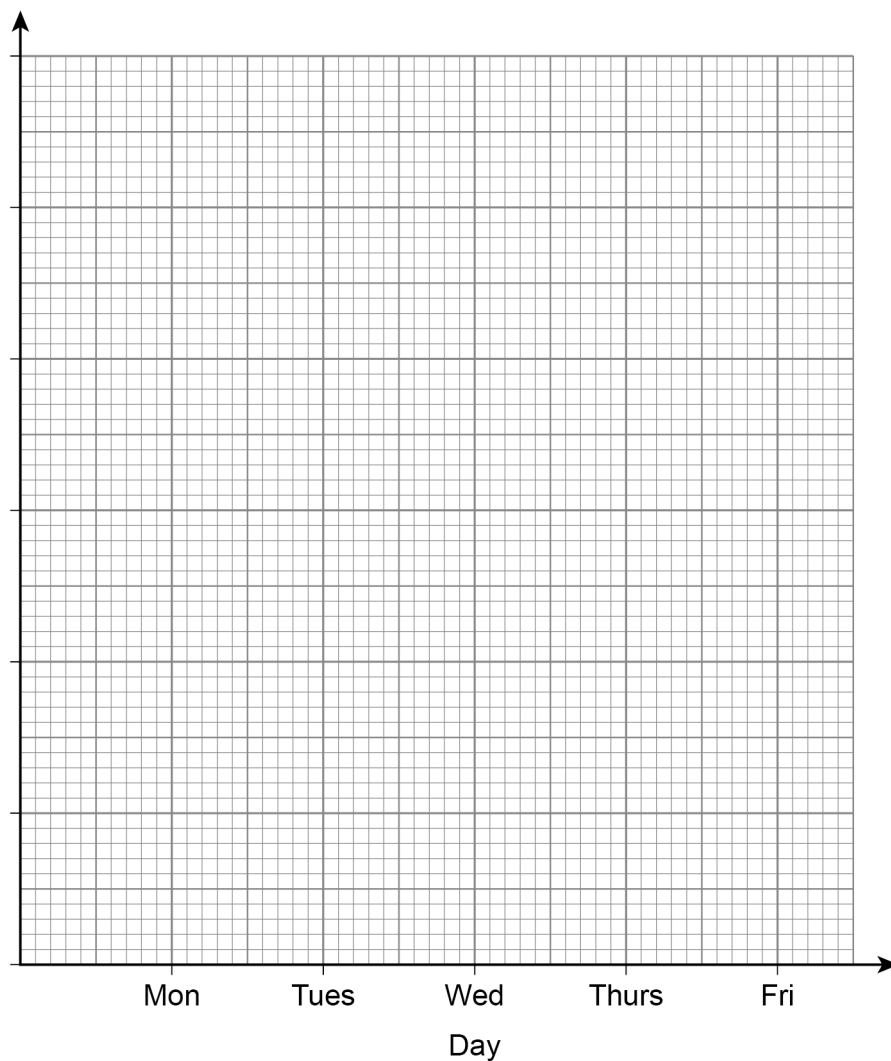
5 Tim does sit-ups each weekday.

Here are his results for last week.

Day	Mon	Tues	Wed	Thurs	Fri
Number of sit-ups	20	35	30	50	55

5 (a) Draw a **time series** graph to represent these data.

[4 marks]



5 (b) Tim says,

“Each day, last week, I did more sit-ups than the day before.”

Is Tim correct?

Tick (✓) a box.

Yes

☐

No

☐

Cannot tell

☐

Give a reason for your answer.

[1 mark]

5 (c) Tim did 190 sit-ups last week.

There are 52 weeks in a year.

Tim calculates that next year he will do $190 \times 52 = 9880$ sit-ups.

5 (c) (i) What assumption has Tim made?

[1 mark]

5 (c) (ii) If Tim's assumption is incorrect, how could this affect his calculation?

[1 mark]

7



- 6** Here is information about the prices (in £) of tickets for the British Grand Prix.

		Ticket type			
		Friday	Saturday	Sunday	Full event
Year	2014	58	76	150	170
	2015	67	88	155	175
	2016	40	60	99	120
	2017	55	70	145	165
	2018	50	60	135	175
	2019	50	95	169	190
	2020	79	109	175	195
	2021	99	149	185	200
	2022	129	179	279	319
	2023	169	209	299	349

Source: oversteer48.com

- 6 (a)** Write down the price of a Sunday ticket in 2018.

[1 mark]

Answer £ _____

- 6 (b)** In which year were **all** ticket prices less than the year before?

[1 mark]

Answer _____



- 6 (c)** Work out the percentage increase in the price of a **Full event** ticket from 2019 to 2023.

[3 marks]

Answer _____ %

- 6 (d)** A fan website says,

“The price of a ticket at the Grand Prix has gone up 238% from 2019 to 2023.”

This statement is correct for the price of a Friday ticket.

Suggest **one** reason why the fan website used the percentage increase for the price of a Friday ticket rather than the percentage increase for a Full event ticket.

[1 mark]

6

Turn over for the next question



- 7** A biased dice is rolled.
What does biased mean?

[1 mark]

1

- 8** A group of people were asked their age.
Here are some of their data.

13 years 14.5 years 14 years and 3 months 5000 days 14

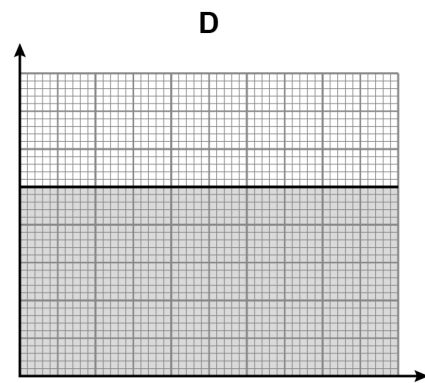
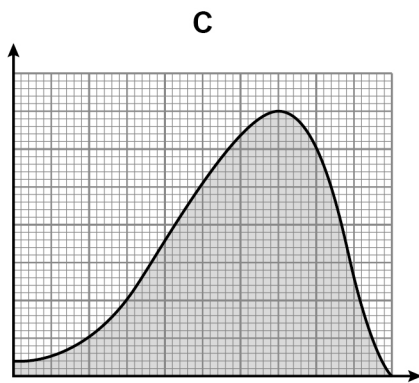
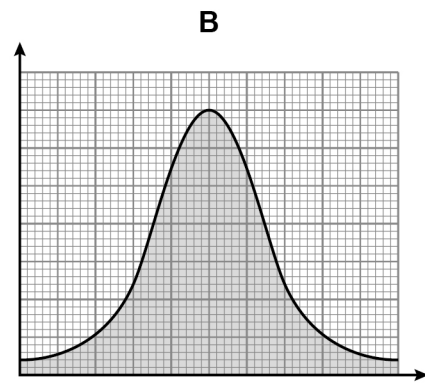
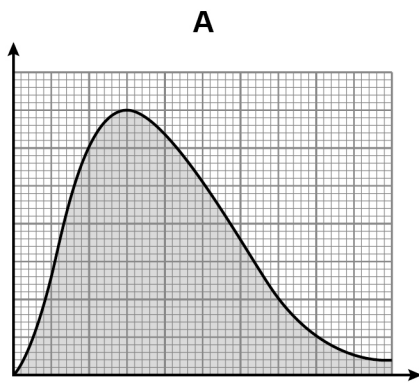
Explain why these data should be cleaned before use.

[1 mark]

1

9

The diagrams show four different distributions of data.



Circle the letter of the diagram that shows negative skew.

[1 mark]

A**B****C****D**

1

Turn over for the next question

Turn over ►



10

Ade teaches Spanish.

Here are the data about how many people attended his class for the last 15 weeks.

28	20	45	52	23
27	31	41	48	33
41	37	61	58	25

10 (a)

Show these data in an ordered stem and leaf diagram.

[4 marks]

Key: ____ | ____ represents _____ people

10 (b) Work out the median number of people.

[1 mark]

Answer _____

10 (c) The following week, 43 people attended the course.

Ade says,

“The median has increased.”

Is Ade correct?

Tick (✓) a box.

Yes

☐

No

☐

Give a reason for your answer.

[1 mark]

6

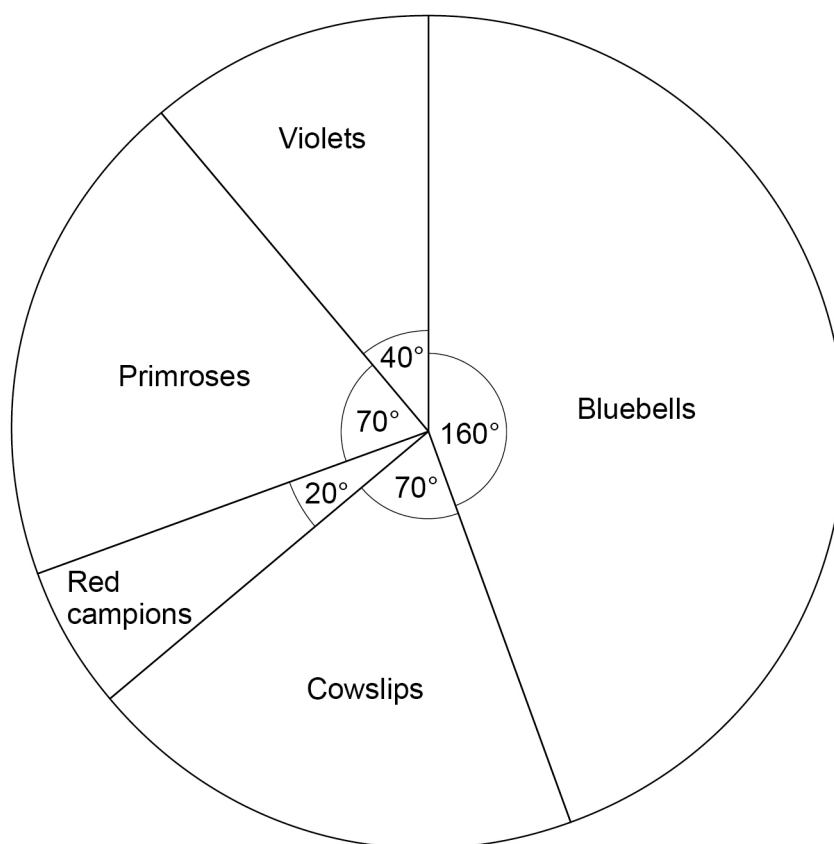
Turn over for the next question



11

Cora is studying a woodland.

Here is a pie chart representing the flowers Cora saw in the woodland.



11 (a) Complete these sentences.

[3 marks]

The flower Cora saw the least is _____.

Cora saw equal numbers of _____ and _____.

Cora saw _____ times as many bluebells as violets.

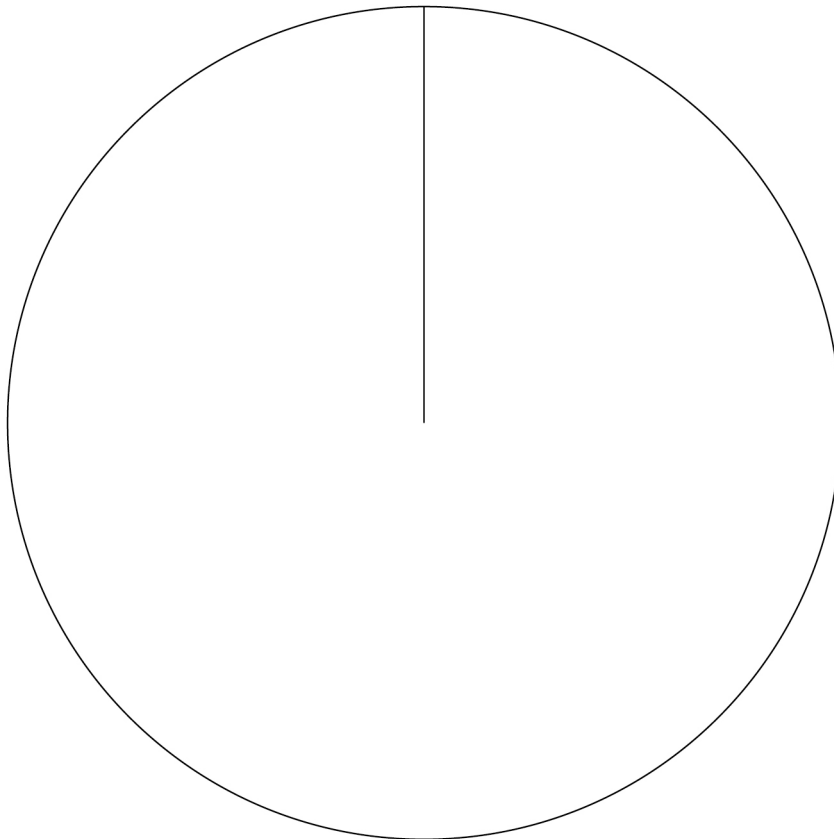


- 11 (b)** The table shows information about the trees Cora saw in the woodland.

Tree	Frequency
Beech	18
Pine	32
Ash	12
Chestnut	3
Other	7
Total	72

Draw a labelled pie chart to show this information.

[4 marks]



Question 11 continues on the next page



11 (c)

Cora says,

“These two pie charts show that I saw more bluebells than pine trees.”

Is Cora correct?

Tick (✓) a box.

Yes

☐

No

☐

Cannot tell

☐

Give a reason for your answer.

[1 mark]

11 (d)

Cora visits the same woodland six months later.

Give **one** reason why she would be unlikely to collect the same data.**[1 mark]**



12

Luis works at a university.

He wants to track the future salaries of the students after they graduate.

He wants to take a sample of students.

He has the following information on 7500 students.

Subject	Science or Maths	English	Medicine	Other
Number of students	930	660	1410	4500

12 (a)

Luis says,

“I will stratify by subject before I select the sample of students.”

Give **one** reason why stratification might be sensible.

[1 mark]

12 (b)

Luis will use a sample of 250 students.

Work out how many students studying medicine should be in his sample.

[2 marks]

Answer _____

3

Turn over for the next question

Turn over ►



- 13** Jaya is investigating how long her friends sleep for.
She asks her friends,
“How many hours do you sleep?”

- 13 (a)** State **one** improvement that **must** be made to this question to make the responses useful.

[1 mark]

- 13 (b)** Jaya groups the responses using medical guidelines on how much sleep is enough.
Give **one** advantage of grouping the data.

[1 mark]

- 13 (c)** The two-way table shows Jaya’s grouped data split into her friends who play sport and her friends who do not play sport.

	Not enough sleep	Right amount of sleep	More than enough sleep	Total
Plays sport	17	96	20	133
Does not play sport	47	19	21	87
Total	64	115	41	220

- 13 (c) (i)** What fraction of these friends do **not** get enough sleep?

Give your answer in its simplest form.

[2 marks]

Answer _____



13 (c) (ii) One of Jaya's friends who plays sport is chosen at random.

Work out the probability that this friend gets the right amount of sleep.

[2 marks]

Answer _____

13 (d) Jaya says,

"My friends who play sport sleep more than my friends who do not play sport."

13 (d) (i) Show how the data supports this statement.

[1 mark]

13 (d) (ii) Show how the data **do not** support this statement.

[1 mark]

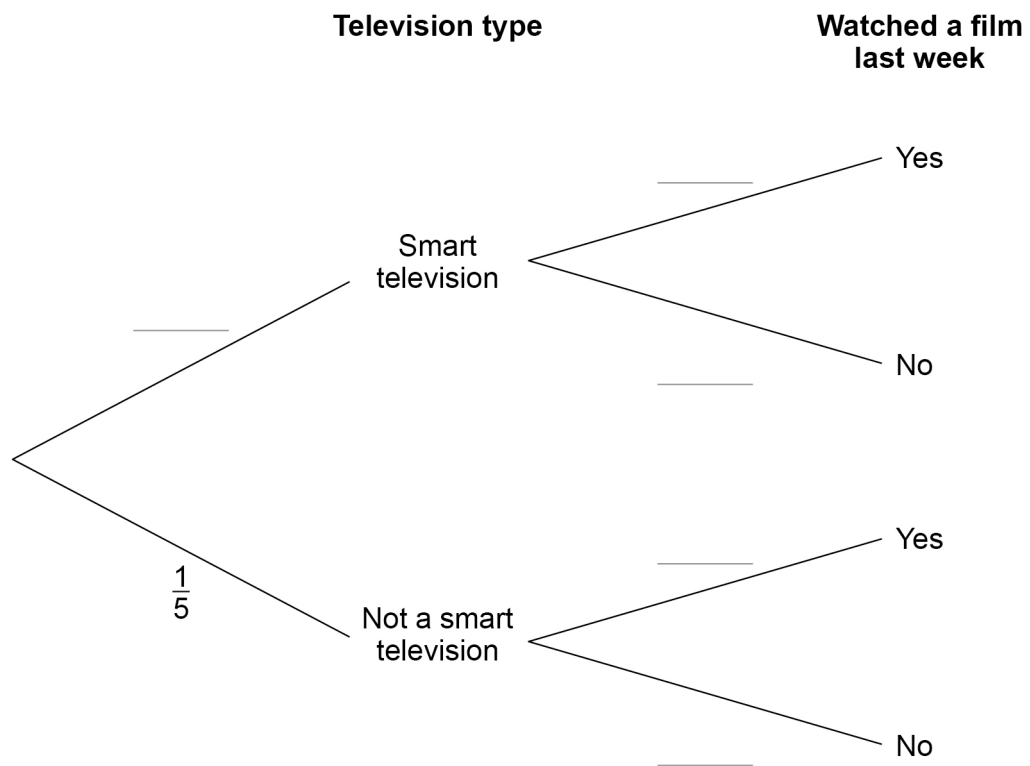


14

Edvin asks the students in his year group if they have a smart television and if they watched a film last week.

His results are,

- 1 in 5 students do **not** have a smart television
- $\frac{2}{3}$ of students who have a smart television watched a film last week
- 30% of students who do **not** have a smart television watched a film last week.



14 (a) Complete the tree diagram.

[3 marks]



14 (b) One student is chosen at random.

14 (b) (i) Work out the probability that the student has a smart television **and** watched a film last week.

[2 marks]

Answer _____

14 (b) (ii) Work out the probability that the student did **not** watch a film last week.

[3 marks]

Answer _____

8

Turn over for the next question



Turn over ►

15 Thea lives on St Mary's, an island in the Isles of Scilly.

15 (a) Thea is investigating the ages and jobs of the people who live on St Mary's.

State the population of Thea's investigation.

[1 mark]

15 (b) (i) Thea gathers information using a questionnaire.

Thea includes this question,

'How old are you?'

Give a reason why this question may result in Thea getting non-responses.

[1 mark]

15 (b) (ii) Suggest **one** way Thea could reduce the number of non-responses to this question.

[1 mark]



Thea considers two different sampling methods.

- Stand in the main town on Tuesday morning.
- Ask the first 50 people to complete the questionnaire.

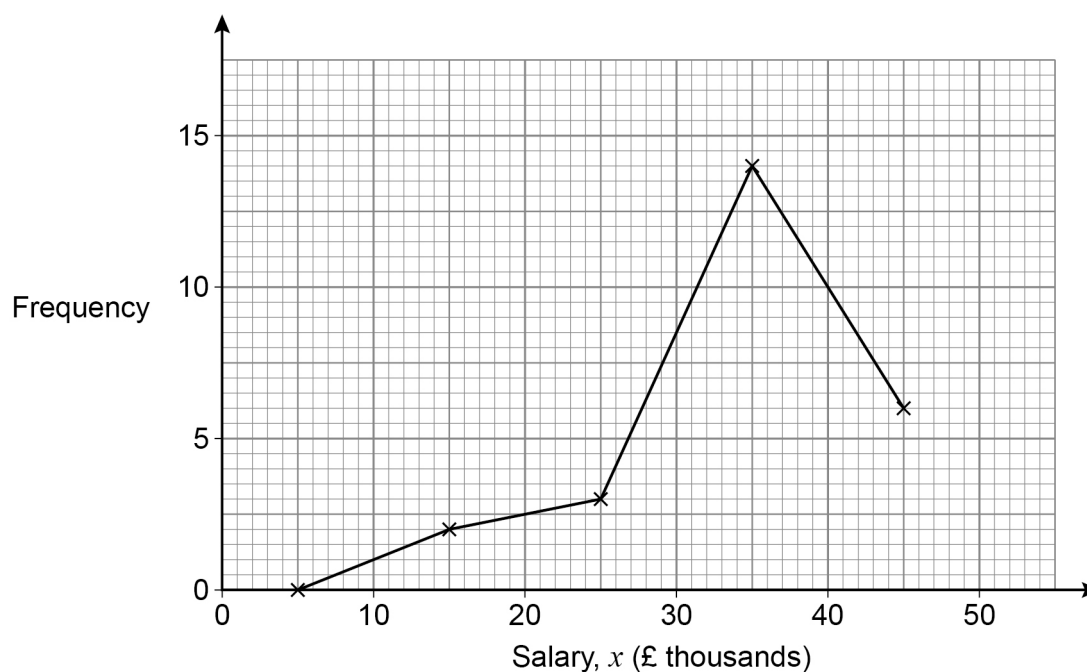
- Give each of the 1700 people who live on St Mary's a unique number.
- Obtain 50 unique, random numbers between 1 and 1700
- Ask the people whose random numbers come up to complete the questionnaire.

State which method Thea should use and give an advantage of that method.

[5 marks]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

The frequency polygon represents information about the salaries of 25 people who live in the main town on St Mary's, **Hugh Town**.



- 15 (d)** Calculate an estimate for the mean salary of the 25 people living in Hugh Town.

[3 marks]

Answer £ _____



- 15 (e)** The table shows data about the salaries of people who live in **Old Town**, another town on St Mary's.

Salary, x (£ thousands)	Frequency
$0 \leq x < 10$	3
$10 \leq x < 20$	12
$20 \leq x < 30$	9
$30 \leq x < 40$	1
$40 \leq x < 50$	0

On the grid opposite, draw a frequency polygon to represent these data.

[3 marks]

- 15 (f)** Without calculations, write down **two** comparisons of the salary distributions of people who live in Hugh Town and people who live in Old Town.

[2 marks]

Comparison 1 _____

Comparison 2 _____

Question 15 continues on the next page



- 15 (g)** Thea finds data on the St Mary's Council website about salaries of people living on St Mary's.

The Council's data are different to Thea's data.

Which data are more reliable?

Tick (✓) a box.

Thea's data

☐

Council's data

☐

Give a reason for your answer.

[1 mark]

17

END OF QUESTIONS



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ANSWER IN THE SPACES PROVIDED**



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Question number	Additional page, if required. Write the question numbers in the left-hand margin.
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