Materials
For this paper you must have:
- a calculator
- mathematical instruments.

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- 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.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 54.
- The quality of your written communication is specifically assessed in Questions 1 and 10. These questions are indicated with an asterisk (*).
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer book.

Advice
- In all calculations, show clearly how you work out your answer.
Answer all questions in the spaces provided.

1  Jon sells clothes. Sales are by phone or online.

   Phone sales
   
<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorts</td>
<td>£450</td>
</tr>
<tr>
<td>Jackets</td>
<td>£800</td>
</tr>
<tr>
<td>Hoodies</td>
<td>£500</td>
</tr>
<tr>
<td>T-shirts</td>
<td>£250</td>
</tr>
</tbody>
</table>

1 (a) Complete the pictogram. The first row has been done for you.

[2 marks]

Phone sales

Key: represents £200

<table>
<thead>
<tr>
<th>Shorts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackets</td>
<td></td>
</tr>
<tr>
<td>Hoodies</td>
<td></td>
</tr>
<tr>
<td>T-shirts</td>
<td></td>
</tr>
</tbody>
</table>
*1 (b) This pictogram represents his online sales.

**Online sales**

Key: \[ \square \square \] represents £1000

<table>
<thead>
<tr>
<th>Shorts</th>
<th>\square \square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackets</td>
<td>\square \square \square</td>
</tr>
<tr>
<td>Hoodies</td>
<td>\square \square</td>
</tr>
<tr>
<td>T-shirts</td>
<td>\square \square</td>
</tr>
</tbody>
</table>

His **phone** sales were £2000

Jon says,

“Three-quarters of my sales were online.”

Is he correct?
You **must** show your working.

[3 marks]
2 A bag has 10 red, 5 blue, 3 yellow and 2 green balls. A ball is taken at random.

2 (a) Circle the chance it is red. [1 mark]

impossible unlikely evens likely certain

2 (b) Circle the chance it is yellow or green. [1 mark]

impossible unlikely evens likely certain
3 Here is a list of vehicles passing a shop on Sunday.

- car  car  van  lorry  car
- car  van  lorry  car  lorry
- lorry  car  car  van  lorry
- car  car  van  lorry  car

3 (a) Complete the table for Sunday. [3 marks]

<table>
<thead>
<tr>
<th>Type of vehicle</th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>van</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lorry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total = 20

3 (b) On Monday,
- there are twice as many lorries as on Sunday
- \( \frac{1}{3} \) of the vehicles are lorries
- the other vehicles are cars.

Work out the number of cars on Monday. [3 marks]

Answer ______________________________________

Turn over
There are 4 aces in a pack of 52 cards.
A card is chosen at random.

4 (a) Work out the probability of choosing an ace.
Give your answer as a decimal.
Write down your full calculator display.

[1 mark]

Answer ______________________________________________________________________

4 (b) Give your answer to part (a) to 3 decimal places.

[1 mark]

Answer ______________________________________________________________________

4 (c) Work out the probability that the card is not an ace.

[1 mark]

Answer ______________________________________________________________________
5 Four numbers have

a total of 70
a mode of 10
a median of 15

Work out the four numbers. [2 marks]

Answer __________, __________, __________, __________

Turn over for the next question
Parents were asked if they like the length of school holidays.

Results for Leeds

<table>
<thead>
<tr>
<th></th>
<th>∠</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>135°</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>135°</td>
<td>No</td>
</tr>
</tbody>
</table>

6 (a) 1080 parents in Leeds replied.

Work out the number who said 'Don’t know'.

[2 marks]

Answer ________________________________
6 (b) 800 parents in Bradford replied. 250 of them said ‘Yes’.

Which parents gave a higher proportion of ‘Yes’ replies, Leeds or Bradford? You must show your working. [3 marks]

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Answer _______________________________________

Turn over for the next question
Here is some information about 32 hotels.

<table>
<thead>
<tr>
<th>Number of lifts</th>
<th>Number of hotels</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total = 32</strong></td>
</tr>
</tbody>
</table>

Work out the total number of lifts in the 32 hotels. [2 marks]

Answer ______________________________________
In a competition, Amy and Beth each get five marks.

<table>
<thead>
<tr>
<th>Marks for Amy</th>
<th>7.8</th>
<th>7.3</th>
<th>4.2</th>
<th>8.1</th>
<th>7.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean mark for Beth</td>
<td>7.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Who has the higher mean mark?
You **must** show your working.

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Answer ____________________________________________

---

Turn over for the next question
9. The bar chart shows the cost of flights to four cities.

9 (a) For flights to which city is the Premium cost double the Economy cost? Circle your answer.

[1 mark]
9 (b) Work out the range of all the flight costs. [2 marks]

______________________________________________________________________________

Answer £ _____________________________________

9 (c) 75 people fly to Miami.
Some fly Economy and the others fly Premium.

The total cost of the Economy flights is £37,820

Use the bar chart to work out the total cost of the Premium flights. [4 marks]

______________________________________________________________________________

Answer £ _____________________________________

Turn over for the next question
On Thursday, the number of cars using 13 car parks is recorded. Here are the results.

40  51  72  47  60
55  61  75  63  69
52  64  56

*10 (a) Show the data on an ordered stem-and-leaf diagram. Remember to complete the key.

Key: ______ | ______ represents ______ cars

[4 marks]
On Friday, the median number of cars using the car parks is 15% lower than Thursday.

Work out the median for Friday.

Answer _______________________________________

Turn over for the next question
11 (a) A fair spinner has 10 equal sections.

Here are the results of eight spins.

4 7 5 6 4 9 4 2

Circle the probability of the arrow landing on 4 on the next spin.

[1 mark]

\[
\frac{1}{10}, \quad \frac{3}{8}, \quad \frac{4}{10}, \quad \frac{4}{9}
\]

11 (b) Describe how to test if a six-sided dice is fair.

[2 marks]
In a survey, 160 people chose A, B or C.

30 women and 26 men chose B.

**Women** chose A : B : C in the ratio 1 : 2 : 3

2 more people chose A than chose C.

Complete the table.  

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td></td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>160</td>
</tr>
</tbody>
</table>
13 Each day Chen buys pasta or a sandwich.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasta</td>
<td>£3.20</td>
</tr>
<tr>
<td>Sandwich</td>
<td>£2.75</td>
</tr>
</tbody>
</table>

For 45 days, the relative frequency of Chen buying a sandwich was \( \frac{1}{5} \).

Altogether, how much did he pay? [4 marks]

Answer £ ____________________________

END OF QUESTIONS
There are no questions printed on this page