1. In a survey, some students were asked what their favourite leisure activity was. Their answers were used to draw this pie chart.

(a) Write down the fraction of the students who answered “Television”. Write your answer in its simplest form.

……………………………

(2)

18 students answered “Music”.

(b) Work out the number of students who took part in the survey.

……………………………

(2)

(Total 4 marks)
2. Sandra carries out a survey of 90 Year 11 students. She asks them their favourite snack.

She draws this accurate pie chart.

Use the pie chart to complete the table.

<table>
<thead>
<tr>
<th>Favourite snack in Year 11</th>
<th>Frequency</th>
<th>Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burger</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Chips</td>
<td>45</td>
<td>180°</td>
</tr>
<tr>
<td>Hot dog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kebab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

(Total 4 marks)
3. Sam recorded the colours of cars parked at his school yesterday. The table shows his results.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>20</td>
</tr>
<tr>
<td>Red</td>
<td>22</td>
</tr>
<tr>
<td>Green</td>
<td>6</td>
</tr>
<tr>
<td>White</td>
<td>12</td>
</tr>
</tbody>
</table>

Complete an accurate pie chart to show this information.

Use the circle given below.

(Total 4 marks)
4. Bhavana asked some people which region their favourite football team came from. The table shows her results.

<table>
<thead>
<tr>
<th>Region</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midlands</td>
<td>22</td>
</tr>
<tr>
<td>London</td>
<td>36</td>
</tr>
<tr>
<td>Southern England</td>
<td>8</td>
</tr>
<tr>
<td>Northern England</td>
<td>24</td>
</tr>
</tbody>
</table>

(a) Complete the accurate pie chart to show these results. Use the circle given below.
Four teams, City, Rovers, Town and United play a competition to win a cup. Only one team can win the cup.

The table below shows the probabilities of City or Rovers or Town winning the cup.

<table>
<thead>
<tr>
<th></th>
<th>City</th>
<th>Rovers</th>
<th>Town</th>
<th>United</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.38</td>
<td>0.27</td>
<td>0.15</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

(b) Work out the value of $x$

................................................. (2)

(Total 5 marks)

5. The table gives information about the lunch arrangements of 900 students.

<table>
<thead>
<tr>
<th>Choice</th>
<th>Frequency</th>
<th>Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full meal</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Hot snack</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>Cold snack</td>
<td>260</td>
<td></td>
</tr>
<tr>
<td>Packed lunch</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>900</td>
<td></td>
</tr>
</tbody>
</table>

Draw an accurate pie chart to show this information.

(Total 4 marks)
6. The table gives information about the medals won by Austria in the 2002 Winter Olympic Games.

<table>
<thead>
<tr>
<th>Medal</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>3</td>
</tr>
<tr>
<td>Silver</td>
<td>4</td>
</tr>
<tr>
<td>Bronze</td>
<td>11</td>
</tr>
</tbody>
</table>

Draw an accurate pie chart to show this information.

(Total 4 marks)
ANSWERS

1. (a) \( \frac{5}{18} \)

\[
\frac{100}{360}
\]

\( M1 \) for \( \frac{100}{360} \) oe fraction

\( A1 \)

(b) \( 72 \)

\( \frac{1}{4} = 18 \) pupils

Total = \( 18 \times 4 \)

\( M1 \) for \( \frac{1}{4} \) oe = 18 pupils OR \( 18 \times 4 \)

\( A1 \)

2. 80

10 40

15 60

Each student 4°

\( B1 \) for 80 (± 2°)

\( B1 \) for measuring 40° and 60° (± 2°)

\( B1 \) fit for 10

\( B1 \) fit for 15

(\( SC B1 \) for 360 – 90 or 180 – 45 or 4 seen, if B0 awarded)

\[4\]

3. Correct pie chart drawn and labelled

\( \sum f = 60 \) so 1 car = 360° ÷ 60 = 6°

Angles Blue…120°; Red…132°; Green…36°; White…72°

\( B1 \) for 360° ÷ 60 oe seen (or if 1 correct sector angle)

\( If 4 \) sectors

\( B2 \) if 4 sectors correct within guidelines

(\( B1 \) if 2 sectors correct within guidelines)

\( B1 \) (dep on \( B2 \) gained from previous 3 marks) if labelled correctly

\[4\]

4. (a) Angles drawn, labelled

\( \sum f = 90 \)
(88), 144, 32, 96

- **M1** for 1 person = 4° or one angle correct in table or pie chart
- **A1** any 2 angles correctly drawn in pie chart
- **A1** fully correct chart labelled
(b) 0.20

\[ 0.38 + 0.27 + 0.15 \]

\[ M1 \text{ sum} \]

\[ A1 \text{ cao} \]

[5]

5. \[80^\circ\]

\[116^\circ\]

\[104^\circ\]

\[60^\circ\]

\[200 \div 900 \times 360 = \]

\[ M1 \text{ for evidence of correct method (e.g. one angle correct)} \]

\[ B2 \text{ all angles correctly drawn } \pm 2^\circ \]

\[ (B1 \text{ for } 2 \text{ angles correctly drawn or all angles correctly calculated}) \]

\[ B1 \text{ for labels (not just angles) depend on at least one sector of } 4 \text{ correct.} \]

[4]

6. Angles drawn, labelled

\[360^\circ \div 18 = 20\]

Sector angles: G = 60; S = 80; B = 220;
Correct sectors labelled correctly
Use angle measurer

\[ B4 \text{ for fully correct and labelled pie chart} \]

\[ (B3 \text{ for all angles correct or for a labelled pie chart with } 2 \text{ correct angles}) \]

\[ (B2 \text{ for labelled pie chart with } 1 \text{ correct angle drawn}) \]

\[ (B1 \text{ for } 360^\circ \div 18 \text{ or } 20 \text{ seen or implied}) \]

[4]