1 A painter mixes 5.6 litres of white paint with 0.75 litres of red paint. If he uses 4.8 litres of paint, how much paint does he have left over?

2 In a drinks machine 3/5 of all the bottle are diet drinks. If the machine holds 200 bottles, how many of these will be a diet drink?

3 The Venue can hold 900 people. On Friday it was only 80% full. How many people were at The Venue on Friday?

4 The marks of a group of pupils in a maths test are shown below.

```
43  17  25  25  29  31  32  11  26  20
25  42  32  33  25  28  41  35  32  26
```

(a) Illustrate this data in an ordered stem and leaf diagram.

(b) What is the mode for the above data?

5 300 people were surveyed and asked for their favourite take away food. The results are shown in the pie chart.

a) How many people preferred Indian?

b) How many people preferred Chinese?
1. Solve algebraically
\[ 7x + 4 = 2x + 29 \]

2. Carla is laying a path in a nursery school. She is using a mixture of alphabet tiles and coloured tiles.

(a) Complete the table below.

<table>
<thead>
<tr>
<th>Number of alphabet tiles ((a))</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of coloured tiles ((c))</td>
<td>6</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Write down a formula for calculating the number of coloured tiles \((c)\) when you know the number of alphabet tiles \((a)\).

(c) Carla uses 86 coloured tiles to make the path. How many alphabet tiles will be in the path?

3. Charlie’s new car has an on-board computer. At the end of a journey the car’s computer displays the information below.

Use the information above to calculate the time he has taken for his journey. Give your answer in hours and minutes.
4. A warning sign is in the shape of an isosceles triangle.

![Warning Sign Diagram](image)

Calculate the height of the sign.

5. Larry has invented a device for checking that ladders are positioned at the correct angle. His design for the device is given below.

![Device Diagram](image)

The height of the triangle is 12cm and the base of the triangle is 3 cm.

Calculate the size of the shaded angle.

6. A section of lawn edging consists of a rectangle with five equal semi-circles on the top.

![Lawn Edging Diagram](image)

Calculate the area of the section in square centimetres. Give your answer correct to the nearest square centimetre.
7. A selection of the number of games won and the total points gained by teams in the Scottish Premier League were plotted on this scattergraph.

(a) Two late results come in. One team won 14 games and scored 42 points. Another team won 6 games and scored 26 points. Mark each result on the scattergraph with an x.

(b) Draw the line of best fit on the scattergraph.

(c) Another team won 10 games. Use your line of best fit to estimate how many points that team were likely to have scored.

8. Expand the brackets and simplify this expression

\[ 7(b - 4) + 3b \]
### Answers Paper 1B

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1 | 1.48 + 0.75 = 6.35  
4.53 x 7 = 31.71 |
| 2 | 200 ÷ 5 = 40  
40 x 3 = 120 bottles of diet drink |
| 3 | 10% of 900 is 90 people  
80% is 720 people |
| 4 | Evidence of an ordered stem and leaf diagram  
Key 3|2 means 32  
mode is 25 |
|   |   |
|   |   |

(a) Indian = \( \frac{90}{360} \times 300 = \frac{1}{4} \times 300 = 75 \text{ people} \)  
(b) Chinese = \( \frac{120}{360} \times 300 = \frac{1}{3} \times 300 = 100 \text{ people} \)

### Answers Paper 2B

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1 | 5x + 4 = 29  
\( \rightarrow \)  
x = 5 |
| 2 | (a) Number of alphabet tiles (a)   
Number of coloured tiles (c)   
(b) \( c = 4a + 2 \)  
(c) \( 86 = 4a + 2 \)  
\( \rightarrow \)  
\( 84 = 4a \)  
\( \rightarrow \)  
\( a = 21 \) |
| 3 | Time = \( \frac{157.5}{45} \)  
\( = 3.5 \text{ hours} \)  
Time is 3 hours and 30 minutes |
| 4 | Form a right-angled triangle with correct dimensions  
\( \text{height} \)  
\( 65 \text{ cm} \)  
\( 35 \text{ cm} \)  
Use Pythagoras Theorem  
c\(^2 = a^2 + b^2 \)  
65\(^2 = 35^2 + b^2 \)  
b\(^2 = 3000 \)  
b = \( \sqrt{3000} \)  
height is 54.8 cm or 55 cm |
| 5 | tan \( x = \frac{A}{O} \)  
\( \rightarrow \)  
\( \tan x = \frac{12}{3} \)  
\( \rightarrow \)  
\( x = \tan^{-1}(12/3) \)  
angle is 75.96° or 76° |
| 6 | Area one semi-circle is \( \frac{\pi 6^2}{2} = 56.5 \text{ cm}^2 \)  
Area of five semi-circles \( 5 \times 56.5 = 282.5 \text{ cm}^2 \)  
Area of rectangle 60 x 14 = 840 cm\(^2 \)  
\text{Total area} \ 840 + 282.5 = 1122.5 \text{ cm}^2 |
| 7 | (a) Points added correctly  
(b) Line of best fit drawn  
(c) Approximately 35 point |
| 8 | 7b – 28 + 3b  
\( \rightarrow \)  
10b - 28 |