1. Let \( a, b, c \) and \( d \) be integers such that \( a < b, b < c \) and \( c = d \).

The mode of these four numbers is 11.  
The range of these four numbers is 8.  
The mean of these four numbers is 8.

Calculate the value of each of the integers \( a, b, c, d \).  
(Total 4 marks)

2. In a suburb of a large city, 100 houses were sold in a three-month period. The following cumulative frequency table shows the distribution of selling prices (in thousands of dollars).

<table>
<thead>
<tr>
<th>Selling price ( P ) ($1000)</th>
<th>( P \leq 100 )</th>
<th>( P \leq 200 )</th>
<th>( P \leq 300 )</th>
<th>( P \leq 400 )</th>
<th>( P \leq 500 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of houses</td>
<td>12</td>
<td>58</td>
<td>87</td>
<td>94</td>
<td>100</td>
</tr>
</tbody>
</table>

The information above is represented in the following frequency distribution.

<table>
<thead>
<tr>
<th>Selling price ( P ) ($1000)</th>
<th>( 0 &lt; P \leq 100 )</th>
<th>( 100 &lt; P \leq 200 )</th>
<th>( 200 &lt; P \leq 300 )</th>
<th>( 300 &lt; P \leq 400 )</th>
<th>( 400 &lt; P \leq 500 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of houses</td>
<td>12</td>
<td>46</td>
<td>29</td>
<td>( a )</td>
<td>( b )</td>
</tr>
</tbody>
</table>

(i) Find the value of \( a \) and of \( b \).  
(ii) Houses which sell for more than $350,000 are described as *De Luxe*.

(a) Estimate the number of *De Luxe* houses sold.  
Give your answer to the nearest integer.  
(Total 2 marks)

(b) Two *De Luxe* houses are selected at random. Find the probability that both have a selling price of more than $400,000.  
(Total 4 marks)
3. The cumulative frequency curve below shows the heights of 120 basketball players in centimetres.

Use the curve to estimate

(a) the median height. (2)
(b) the interquartile range. (2)
(c) draw a box and whisker plot for this data. (2)
(d) what is the minimum height to be in the 90th percentile? (2)
(e) in what percentile is a player who measures 169 cm? (2)

(Total 10 marks)