



Q6

a) *4ml*

- $c = 4 \times e^0 = 4$

b) *11 mins 30 secs*

- $e^{-0.025t} = 0.75$

- $-0.025t = \ln(0.75)$

- $t = 11.507mins$

c) *27 mins 43.6 sec*

$$e^{-0.025t} = 0.5$$

- $-0.025t = \ln(0.5)$

$$t = \frac{\ln(0.5)}{-0.025}$$

- $t = 27.725mins$

*27 mins 43.6 secs*

Q7	a) <i>Change question</i>  b) $6.54 \times 10^{-2}$	<ul style="list-style-type: none"> <li>• 1.2</li> <li>• <math>\times 10^5</math></li> <li>• 6.54</li> <li>• <math>\times 10^{-2}</math></li> </ul>
Q8	960g	<ul style="list-style-type: none"> <li>• Strategy 5 <math>\rightarrow</math> 1600g or <math>\frac{320}{5}</math> 3 <math>\rightarrow</math></li> <li>• <math>\frac{3}{5}</math> or cost of one 320g</li> <li>• <math>\frac{3}{5} \times 1600 = 960g</math> or <math>3 \times 320g = 960g</math></li> </ul>
Q9	7 mins quicker	<ul style="list-style-type: none"> <li>• Strategy 7 <math>\rightarrow</math> 56 or <math>7 \times 56</math> 8 <math>\rightarrow</math></li> <li>• <math>\frac{7}{8}</math> or one pupil 392</li> <li>• <math>\frac{7}{8} \times 56 = 49</math> mins or <math>\frac{392}{8} = 49</math> minutes</li> <li>• <math>56 - 49 = 7</math>mins</li> </ul>
Q10	202.5 km	<ul style="list-style-type: none"> <li>• <math>D = ST</math></li> <li>• <math>D = 45 \times 4.5</math></li> <li>• <math>D = 202.5km</math></li> </ul>
Q10	202.5 km	<ul style="list-style-type: none"> <li>• <math>6\% \rightarrow \frac{6}{100} \times 27800 = \pounds 1668</math></li> <li>• <math>12 \times (448 + 206) = \pounds 7848</math></li> <li>• <math>1668 + 7848 = \pounds 9516</math></li> <li>• <math>27800 - 9516 = \pounds 18\ 284</math></li> <li>• <math>18\ 284 \div 12 = \pounds 351.62</math></li> </ul>
Q11	£30	<ul style="list-style-type: none"> <li>• <math>20\% \rightarrow 2 \times 90 = 180</math></li> <li>• <math>900 - 180 = 720</math></li> <li>• <math>720 \div 24 = \pounds 30</math></li> </ul>

Q12	<p>a) <i>See Table</i></p> <p>b) <i>Mean = 4.16</i></p> <p>c) <i>Mode = 4</i></p> <p>d) <i>Median = 4</i></p>	<ul style="list-style-type: none"> <li>• <i>Third column complete</i></li> <li>• <i>Totals</i></li> </ul> <table border="1" data-bbox="722 241 1150 539"> <thead> <tr> <th>Number of letters</th> <th>Frequency</th> <th>No. X Frequency</th> </tr> </thead> <tbody> <tr><td>1</td><td>5</td><td>5</td></tr> <tr><td>2</td><td>12</td><td>24</td></tr> <tr><td>3</td><td>18</td><td>54</td></tr> <tr><td>4</td><td>26</td><td>104</td></tr> <tr><td>5</td><td>18</td><td>90</td></tr> <tr><td>6</td><td>11</td><td>66</td></tr> <tr><td>7</td><td>7</td><td>49</td></tr> <tr><td>8</td><td>3</td><td>24</td></tr> <tr><td><b>Totals</b></td><td><b>100</b></td><td><b>416</b></td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>• <math>mean = \frac{416}{100}</math></li> <li>• 4.16</li> <li>• <i>Mode = 4</i></li> <li>• <i>Median between 50th and 51st value</i></li> <li>• <i>Median = 4</i></li> </ul>	Number of letters	Frequency	No. X Frequency	1	5	5	2	12	24	3	18	54	4	26	104	5	18	90	6	11	66	7	7	49	8	3	24	<b>Totals</b>	<b>100</b>	<b>416</b>
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Q13	<p>a) <i>Box five 9</i></p> <p>b) <i>Box three 8</i></p> <p>c) <i>Box two 5</i> <i>Box four 8</i></p>	<ul style="list-style-type: none"> <li>• <i>From range <math>H - 5 = 4</math> box five is 9</i></li> <li>• <i>From median box three is 8</i></li> <li>• <math>\frac{5+x+8+y+9}{5} = 7</math></li> <li>• <math>x + y = 13</math></li> <li>• <i>Box two must be 5 and Box four must be 8</i></li> </ul>																														

Total 50

SAL	Questions	Marks
Number	1 - 11	/38
Measure		
Shape		
Info handling	12	/7
Problem Solving	13	/5
	<b>Total</b>	<b>/50</b> %