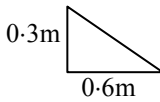


	Give 1 mark for each •	Illustration(s) for awarding each mark
1	<p><b>ans: £12 000</b> <b>5KU</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> calculate value after 1 year</li> <li>•<sup>2&amp;3</sup> correct strategy for further 3 years</li> <li>•<sup>4</sup> calculations correct</li> <li>•<sup>5</sup> rounding correct</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>0.86 \times 17\,500 = 15\,050</math></li> <li>•<sup>2</sup> M.F. = 0.935</li> <li>•<sup>3</sup> <math>0.935^3 \times 15\,050</math></li> <li>•<sup>4</sup> 12 301.875...</li> <li>•<sup>5</sup> £12 000</li> </ul>
2(a)	<p><b>ans: 51 calls/h, SD = 4.5</b> <b>4KU</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> calculating mean</li> <li>•<sup>2</sup> knowing how to calculate s.d.</li> <li>•<sup>3</sup> correctly calculating s.d.</li> <li>•<sup>4</sup> rounding</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>\bar{x} = \frac{306}{6} = 51</math></li> <li>•<sup>2</sup> <math>\sum x = 306, \sum x^2 = 15\,708</math></li> <li>•<sup>3</sup> <math>sd = \sqrt{\frac{15\,708 - \frac{306^2}{6}}{5}}</math></li> <li>•<sup>4</sup> 4.52</li> </ul>
2(b)	<p><b>ans: Mean no. calls higher at weekend. No. calls more consistent at weekend.</b> <b>2RE</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> compare means</li> <li>•<sup>2</sup> interpret s.d. as the idea of spread</li> </ul>	
3	<p><b>ans: 221cm<sup>2</sup></b> <b>5RE</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> correct strategy</li> <li>•<sup>2</sup> know how to calculate an internal angle</li> <li>•<sup>3</sup> correctly calculate angle</li> <li>•<sup>4</sup> know how to calculate area</li> <li>•<sup>5</sup> correctly calculate area</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>\cos \theta = \frac{18^2 + 28^2 - 25^2}{2 \times 18 \times 28}</math></li> <li>•<sup>2</sup> <math>\cos \theta = 0.479</math></li> <li>•<sup>3</sup> <math>\theta = 61.4^\circ</math></li> <li>•<sup>4</sup> <math>Area = \frac{1}{2} \times 18 \times 28 \times \sin 61.4^\circ</math></li> <li>•<sup>5</sup> 221cm<sup>2</sup></li> </ul>
4	<p><b>ans: 2.9 and -0.6</b> <b>4KU</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> identify <math>a, b, c</math></li> <li>•<sup>2</sup> correctly substitute into formula</li> <li>•<sup>3</sup> calculate one value</li> <li>•<sup>4</sup> calculate second value</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>a = 3, b = -7, c = -5</math></li> <li>•<sup>2</sup> <math>x = \frac{7 \pm \sqrt{109}}{6}</math></li> <li>•<sup>3</sup> 2.9</li> <li>•<sup>4</sup> -0.6</li> </ul>
5(a)	<p><b>ans: 53.2°</b> <b>4KU</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> identifies right-angled triangle</li> <li>•<sup>2</sup> knows to use trig to find angle in triangle</li> <li>•<sup>3</sup> calculates angle in right-angled triangle</li> <li>•<sup>4</sup> doubles to find angle in kite</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> RAT sketched and labelled</li> <li>•<sup>2</sup> <math>\tan x^\circ = \frac{4}{8}</math></li> <li>•<sup>3</sup> <math>x = 26.6^\circ</math></li> <li>•<sup>4</sup> <math>\angle ABC = 2 \times 26.6 = 53.2^\circ</math></li> </ul>
5(b)	<p><b>ans: 32cm<sup>2</sup></b> <b>2KU</b></p> <ul style="list-style-type: none"> <li>•<sup>1</sup> finds area of triangle</li> <li>•<sup>2</sup> doubles to find area of kite</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>Area = 0.5 \times 8 \times 4 = 16\text{cm}^2</math></li> <li>•<sup>2</sup> <math>Area = 2 \times 16 = 32\text{cm}^2</math></li> </ul>

	Give 1 mark for each •	Illustration(s) for awarding each mark
6	<b>ans: £148.40</b> <b>4KU</b> <ul style="list-style-type: none"> <li>•<sup>1</sup> recognising ratio problem</li> <li>•<sup>2</sup> attempts to find original price</li> <li>•<sup>3</sup> correctly calculates price</li> <li>•<sup>4</sup> correctly calculates difference</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>92\% = £1\,706.60</math></li> <li>•<sup>2</sup> <math>100\% = \frac{100}{92} \times £1\,706.60</math></li> <li>•<sup>3</sup> £1 855</li> <li>•<sup>4</sup> <math>£(1\,855 - 1\,706.60) = £148.40</math></li> </ul>
7(a)	<b>ans: 7cm</b> <b>5RE</b> <ul style="list-style-type: none"> <li>•<sup>1</sup> knows to use Pythagoras</li> <li>•<sup>2</sup> substitutes sides</li> <li>•<sup>3</sup> attempts to form quadratic equation</li> <li>•<sup>4</sup> solves quadratic equation</li> <li>•<sup>5</sup> discards</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> evidence</li> <li>•<sup>2</sup> <math>(2a+1)^2 = (a-5)^2 + (2a)^2</math></li> <li>•<sup>3</sup> <math>a^2 - 14a + 24 = 0</math></li> <li>•<sup>4</sup> <math>a = 2, a = 12</math></li> <li>•<sup>5</sup> <math>a = 12</math></li> </ul>
7(b)	<b>ans: 56cm</b> <b>1KU</b> <ul style="list-style-type: none"> <li>•<sup>1</sup> calculates perimeter</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>7 + 24 + 25 = 56</math></li> </ul>
8	<b>ans : 7m<sup>2</sup></b> <b>5RE</b> <ul style="list-style-type: none"> <li>•<sup>1</sup> interpret information</li> <li>•<sup>2</sup> identify right angled triangle</li> <li>•<sup>3</sup> calculate missing side</li> <li>•<sup>4</sup> state breadth of mat</li> <li>•<sup>5</sup> calculate area</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> </li> <li>•<sup>2</sup></li> <li>•<sup>3</sup> <math>\sqrt{(0.6^2 - 0.3^2)} = 0.5m</math></li> <li>•<sup>4</sup> breadth = 1m</li> <li>•<sup>5</sup> answer</li> </ul>
9	<b>ans: 96.5km</b> <b>4RE</b> <ul style="list-style-type: none"> <li>•<sup>1</sup> interpreting information</li> <li>•<sup>2</sup> calculate all internal angles</li> <li>•<sup>3</sup> correct strategy to find distance</li> <li>•<sup>4</sup> correctly calculates distance</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>\angle GBR = 66^\circ, \angle GRB = 30^\circ</math></li> <li>•<sup>2</sup> <math>\angle BGR = 84^\circ</math></li> <li>•<sup>3</sup> <math>\frac{b}{\sin 66^\circ} = \frac{105}{\sin 84^\circ}</math></li> <li>•<sup>4</sup> 96.5km</li> </ul>
10	<b>ans: Blade x 4</b> <ul style="list-style-type: none"> <li>•1 for interpreting variation statement</li> <li>•2 for substituting</li> <li>•3 for finding k, the constant of variation.</li> <li>•4 for interpreting " ..as the square of.."</li> <li>•5 for answer</li> </ul>	<ul style="list-style-type: none"> <li>•1 <math>T = ks^2/b</math></li> <li>•2 <math>18 = kx6^2/30</math></li> <li>•3 <math>k = 15</math></li> <li>•4 <math>s \times 2 \Rightarrow b \times 2^2</math></li> <li>•5 <math>b \times 4</math></li> </ul>
<b>Total: KU: 24 RE: 26</b>		<b>Totals for Papers 1 and 2 KU: 45 RE: 45</b>