

Qu	Give one mark for each •	Illustration for awarding mark
1	<b>ans : 63.7 mg lost</b> <b>4 marks</b> • <sup>1</sup> uses correct multiplier • <sup>2</sup> knows how to calculate amount left • <sup>3</sup> finds amount remaining • <sup>4</sup> calculates amount lost	• <sup>1</sup> 0.88 • <sup>2</sup> $0.88^3 \times 200$ [or 3 individual calculations] • <sup>3</sup> 136.3 • <sup>4</sup> $200 - 136.3 = 63.7$ mg
2a	<b>ans : <math>4x + 5y = 3.88</math></b> <b>1 mark</b> • <sup>1</sup> correct equation	• <sup>1</sup> $4x + 5y = 3.88$
b	<b>ans: <math>3x + 2y = 2.14</math></b> <b>1 mark</b> • <sup>1</sup> correct equation	• <sup>1</sup> $3x + 2y = 2.14$
c	<b>ans : £1.28</b> <b>4 marks</b> • <sup>1</sup> knows to use sim.equations • <sup>2</sup> prepares equations to solve • <sup>3</sup> finds cost of 1 egg and 1 flake • <sup>4</sup> answer	• <sup>1</sup> evidence • <sup>2</sup> $12x + 15y = 11.64; 12x + 8y = 8.56$ • <sup>3</sup> egg = 42p; flake = 44p • <sup>4</sup> $(2 \times 42) + 44 = £1.28$
3	<b>ans : 2</b> <b>2 marks</b> • <sup>1</sup> substitutes values • <sup>2</sup> answer	• <sup>1</sup> $[(2 \times 7) - (2 \times 4)] / 3$ • <sup>2</sup> 2
4a	<b>ans : <math>250\text{cm}^3</math></b> <b>1 mark</b> • <sup>1</sup> finds volume and rounds	• <sup>1</sup> $15.2 \times 4.8 \times 3.4 = 250\text{cm}^3$ [2 sig.figs.]
b	<b>ans : 1.34 cm</b> <b>4 marks</b> • <sup>1</sup> finds volume of 1 sphere • <sup>2</sup> substitutes values in formula • <sup>3</sup> re-arranges to $r^3$ • <sup>4</sup> takes cube root	• <sup>1</sup> $250 \div 25 = 10\text{cm}^3$ • <sup>2</sup> $10 = \frac{4}{3}\pi r^3$ • <sup>3</sup> $r^3 = 2.387324\dots$ • <sup>4</sup> $r = 1.34\text{cm}$
5	<b>ans : <math>96^\circ</math></b> <b>2 marks</b> • <sup>1</sup> knows $\angle BPA$ is right angled • <sup>2</sup> knows AB is axis of symmetry	• <sup>1</sup> $\angle BAP = 90 - 42 = 48^\circ$ • <sup>2</sup> $\angle PAQ = 96^\circ$
6a	<b>ans : 7, 15, 23, 28, 31, 33, 34</b> <b>1 mark</b> • <sup>1</sup> cumulative frequency completed	• <sup>1</sup> 7, 15, 23, 28, 31, 33, 34
b	<b>ans: 13 years</b> <b>1 mark</b> • <sup>1</sup> median identified	• <sup>1</sup> 13 years

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7	ans : $54.5\text{cm}^2$ or $54.4\text{cm}^2$ 2 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> uses correct fraction</li> <li>•<sup>2</sup> answer</li> </ul>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <u>Using <math>\pi</math></u>  <ul style="list-style-type: none"> <li>•<sup>1</sup> <math>\frac{135}{360} \times \pi \times 6.8^2</math></li> <li>•<sup>2</sup> <math>54.5\text{cm}^2</math></li> </ul> </div> <div style="text-align: center;"> <u>Using 3.14</u>  <ul style="list-style-type: none"> <li>•<sup>1</sup> <math>\frac{135}{360} \times 3.14 \times 6.8^2</math></li> <li>•<sup>2</sup> <math>54.4\text{cm}^2</math></li> </ul> </div> </div>
8a	ans : $P = 3W + 5$ 3 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> finds gradient</li> <li>•<sup>2</sup> finds y - intercept</li> <li>•<sup>3</sup> states equation of line</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>m = \frac{35 - 5}{10 - 0} = \frac{30}{10} = 3</math></li> <li>•<sup>2</sup> (0, 5)</li> <li>•<sup>3</sup> <math>P = 3W + 5</math></li> </ul>
b	ans: 86 points      1 mark <ul style="list-style-type: none"> <li>•<sup>1</sup> substitutes and evaluates</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>3 \times 27 + 5 = 86</math></li> </ul>
9	ans : £244.20      4 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> finds basic pay</li> <li>•<sup>2</sup> finds overtime rate</li> <li>•<sup>3</sup> finds overtime pay</li> <li>•<sup>4</sup> calculates gross pay</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>15 \times £7.40 = £111</math></li> <li>•<sup>2</sup> <math>£7.40 \times 1.5 = £11.10</math></li> <li>•<sup>3</sup> <math>£11.10 \times 12 = £133.20</math></li> <li>•<sup>4</sup> <math>£111 + £133.20 = £244.20</math></li> </ul>
10	ans : £237.60      3 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> selects correct amounts</li> <li>•<sup>2</sup> finds difference in payments</li> <li>•<sup>3</sup> multiplies by 12 to answer</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> £420.04 and £439.84</li> <li>•<sup>2</sup> <math>£439.84 - £420.04 = £19.80</math></li> <li>•<sup>3</sup> <math>£19.80 \times 12 = £237.60</math></li> </ul>
11	ans : £90.75      4 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> finds taxable income</li> <li>•<sup>2</sup> knows to find 22% of remainder</li> <li>•<sup>3</sup> answer</li> <li>•<sup>4</sup> knows to divide by 12 to answer</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> <math>£10350 - £5400 = £4950</math></li> <li>•<sup>2</sup> <math>0.22 \times £4950</math></li> <li>•<sup>3</sup> £1089</li> <li>•<sup>4</sup> <math>£1089 \div 12 = £90.75</math></li> </ul>
12	ans : 60cm      4 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> assembles facts in right triangle</li> <li>•<sup>2</sup> knows to use Pythagoras</li> <li>•<sup>3</sup> finds half the width</li> <li>•<sup>4</sup> answer</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup></li> <li>•<sup>2</sup> <math>50^2 - 40^2</math></li> <li>•<sup>3</sup> 30cm</li> <li>•<sup>4</sup> 60cm</li> </ul> <div style="text-align: center; margin-top: 10px;"> </div>
13	ans: 3.8cm      4 marks <ul style="list-style-type: none"> <li>•<sup>1</sup> knows to use cosine rule</li> <li>•<sup>2</sup> substitutes values correctly in formula</li> <li>•<sup>3</sup> calculates value of <math>p^2</math> correctly</li> <li>•<sup>4</sup> takes square root</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> evidence</li> <li>•<sup>2</sup> <math>p^2 = 3 \cdot 5^2 + 4 \cdot 5^2 - (2 \times 3 \cdot 5 \times 4 \cdot 5 \cos 55^\circ)</math></li> <li>•<sup>3</sup> <math>p^2 = 14.43234.....</math></li> <li>•<sup>4</sup> 3.8 (3.79899...)</li> </ul>

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14	<b>ans : £405</b> <span style="float: right;"><b>4 marks</b></span> <ul style="list-style-type: none"> <li>•<sup>1</sup> first decision correct</li> <li>•<sup>2</sup> calculates basic cost of hire</li> <li>•<sup>3</sup> second decision correct</li> <li>•<sup>4</sup> answer subtracted from £450</li> </ul>	<ul style="list-style-type: none"> <li>•<sup>1</sup> cost is £45 per day</li> <li>•<sup>2</sup> <math>£45 \times 10 = £450</math></li> <li>•<sup>3</sup> <math>10\% \text{ of } £450 = £45</math></li> <li>•<sup>4</sup> £405</li> </ul>
	<b>Total</b>	<b>50 marks</b>