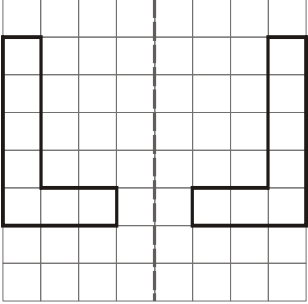
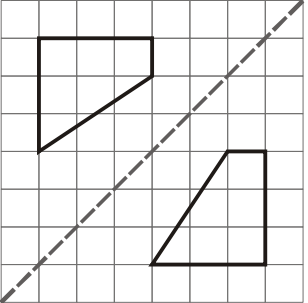
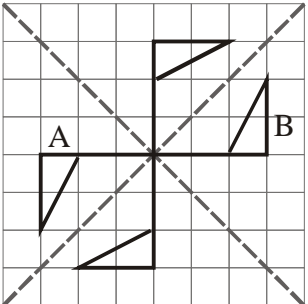


Question No	WORKING	CRITERIA	Marks	Total Mark
1	<p>(i) 1 hour = <u>3600</u> seconds</p> <p>(ii) 0.1 kilogram = <u>100</u> grams</p> <p>(iii) $\frac{1}{8}$ kilometre = <u>125 000</u> millimetres</p> <p>(iv) 5 minutes = $\frac{1}{12}$ hour.</p>	<p>3600</p> <p>100</p> <p>125000</p> <p>$\frac{1}{12}$ or equivalent; e.g. $\frac{5}{60}$. For answer in decimal representation, accept only 0.083</p>	<p>B1</p> <p>B1</p> <p>B1</p> <p>B1</p>	<p>4</p>
2	<p>Figure 1</p>  <p>Figure 2</p>  <p>Figure 3</p> 	<p>Figure 1</p> <p>Figure 2</p> <p>Figure 3</p> <p>One of the flags A or B is correct</p> <p>The other two flags are also drawn correctly</p>	<p>B1</p> <p>B1</p> <p>B1</p> <p>B1</p>	<p>4</p>

Question No	WORKING	CRITERIA	Marks	Total Mark
<p>3i</p> <p>Sunday 03:45</p> <p>3ii</p> <p>Malta is 9 hr ahead of Canada. On Monday at 1:00 in Malta, it is still Sunday at 16:00 in Canada</p>		<p>Sunday 03:45 <i>Accept Sunday 3:45 & Sunday 3:45 am</i></p> <p>Sunday 16:00 or 4:00pm <i>Accept 16pm, 04:00pm but do not accept 04:00 or 4:00</i></p>	<p>B1</p> <p>B1 B1</p>	<p>3</p>
<p>4</p> <p>There is enough:</p> <p>Flour for 6 pies Margerine for 2000/300--- 6 pies Eggs for 8 pies Carrots for 8 pies Potatoes for 5 pies</p> <p>Maximum no of pies that can be made is 5</p>		<p>For <i>one</i> ingredient: works out correctly how many pies such ingredient would serve</p> <p>Same as above – but for <i>two more</i> ingredients</p> <p>Answer 5 pies. <i>Correct working needs to be shown for all five ingredients</i></p>	<p>M1</p> <p>M1</p> <p>A1</p>	<p>3</p>
<p>5i</p> <p>€1 = \$1.8946</p> <p>€2000 = \$1.8946 × 2000 = \$3789.20</p> <p>5ii</p> <p>On her return, the €450 were exchanged for \$450 = $\frac{€450}{2.0387} = \mathbf{€20.73}$</p> <p>Before she left, the €450 cost her \$450 = $\frac{€450}{1.8946} = \mathbf{€37.52}$</p> <p>She lost €16.79, €17 to the nearest euro</p>		<p>Multiplies 2000 by given conversion rate \$3789.20, or 3789 or 3789.20</p> <p>divides €450 by one of the given exchange rates for the euro, i.e. by 1.8946 or 2.0387</p> <p>divides €450 by the other exchange rate for the euro.</p> <p>Obtains correct answers for both conversions, i.e. obtains €20.73 and €37.52- do not penalise if answers are rounded prematurely</p> <p>She lost €17 – Accept €16.79</p>	<p>M1</p> <p>A1</p> <p>M1</p> <p>M1</p> <p>A1</p> <p>A1</p>	<p>6</p> <p>FNW*</p>

* FNW stands for “Full Marks No Working”.

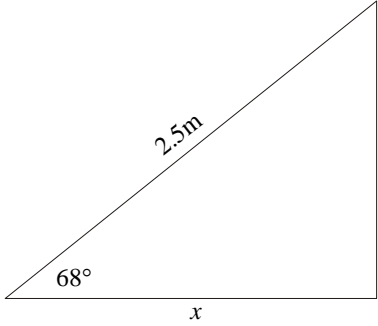
Question No	WORKING	CRITERIA	Marks	Total Mark
6	<p>$w = 25^\circ$ (angles in the same segment are equal) $x = 90 - 25 = 65^\circ$ (angle subtended by a diameter is 90°) $y = 25^\circ$ (y is one of the base angles of an isosceles triangle. The other base angle is 25°) $z = 50^\circ$ (angle at centre is twice angle at the circumference) OR (z is an exterior angle of a triangle where the opposite interior angles are both 25°, thus add up to 50°)</p>	<p>$w = 25^\circ$ $x = 65^\circ$ $y = 25^\circ$ $z = 50^\circ$</p> <p>At least two correct reasons Four correct reasons</p>	<p>B1 B1 B1 B1 M1 M1</p>	6
7i	<p>No of hrs of sunshine in successive days: 8.9, 9.8, 9.7, 7.3, 8.1, 7.9 and 8.0 Total no of hrs of sunshine = 59.7hrs in 7 days.</p> <p>Average is 8.52857 hour/day</p>	<p>Uses a correct method for finding mean, for example: adds and divides by 7 OR finds mean of {0.9, 1.8, 1.7, - 0.7, 0.1, -0.1, 0.0} and then adds 8.</p> <p>8.5 hour/day or more accurate</p>	<p>M1</p> <p>A1</p>	5
7ii	<p>Total no of hrs of sunshine second week = $9.8 \times 7 = 68.6$ hr So there were 8.9 more hrs of sunshine that week</p> <p>OR</p> <p>Difference in means = $9.8 - 8.5 = 1.3$ hours per day. So there were $1.3 \times 7 = 9.1$ more hours of sunshine during 2nd week</p>	<p>Multiplies either 9.8 or difference in means by 7 Subtracts appropriately to method used Accept answer between 8.9 and 9.1 hours</p>	<p>M1 M1 A1</p>	5

Question No	WORKING	CRITERIA	Marks	Total Mark
8	<p>Angles of quadrilateral ABCP add up to 360° (P being the point of intersection of the line of symmetry and CD) Angle APC = 90° So angle BAP = $360 - (100 + 120 + 90) = 50$ Angle BAE = $2 \times 50 = 100^\circ$</p> <p>OR</p> <p>\angle^s of a pentagon = 6rt angles = 540° By symmetry, $\angle E = 100^\circ$, $\angle C = 120^\circ$ Sum of \angle^s B, C, D & E = 440° Therefore $\angle A = 540^\circ - 440^\circ = 100^\circ$</p>	<p>Uses sum of angles of a quadrilateral = 360°</p> <p>States that angle APC = 90° Uses angle APC = 90° Uses $\angle BAE = 2 \times \angle BAP$ Angle BAE = 100°</p> <p>OR</p> <p>\angle^s of a pentagon = 540° Uses symmetry to find $\angle E$ & $\angle C$ appropriately Finds $\angle A$ by adding the four angles and subtracts from angles of pentagon – <i>this mark is not awarded if \angle^s of pentagon are considered to add up to 360°</i></p> <p>$\angle A = 100^\circ$</p>	<p>M1 M1</p> <p>M1 M1 A1</p> <p>M1, A1 M1 M1</p> <p>A1</p>	<p>5</p> <p>FNW</p>
9a	<p>$5(2x - 8) = 3x - 3(2x + 9)$. $10x - 40 = 3x - 6x - 27$ $13x = 13$ $x = 1$</p>	<p>Removes both brackets correctly Changes terms to other side of equation correctly $x = 1$</p>	<p>M1 M1 A1</p>	<p>5</p>
9b	<p>When $x = -1$, $y = 3x^2 - 2x + 10 = 3 + 2 + 10 = 15$</p>	<p>Uses that $3x^2 = 3$ or that $-2x = +2$ 15</p>	<p>M1 A1</p>	<p>FNW</p>
10i	<p>$150 \times 90 \times 8 = 108000 \text{ cm}^3$ $150 \times 60 \times 16 = 144000 \text{ cm}^3$ Total volume is 252000 cm^3</p> <p>OR</p> <p>Area of cross-section is $(8 \times 90) + (60 \times 16) = 720 + 960 = 1680$ Volume = $1680 \times 150 = 252000 \text{ cm}^3$</p>	<p>Finds vol of top appropriately Finds vol of leg appropriately Adds the two volumes 252000</p> <p>OR</p> <p>Finds area of T appropriately Multiplies area above by 150 252000</p>	<p>M1 M1 M1 A1</p> <p>M2 M1 A1</p>	<p>6</p>
10ii	<p>1000 cm^3 of concrete weighs 2.3kg Table weighs $252 \times 2.3 = 579.6 \text{ kg}$</p>	<p>Uses appropriate reasoning to work out weight (i.e. divides vol by 1000 and multiplies by 2.3)</p> <p>579.6 kg</p>	<p>M1 A1ft*</p>	

* ft stands for "Follow through".

Question No	WORKING	CRITERIA	Marks	Total Mark
11i	See transparency*	Angle at A is $60^\circ \pm 2^\circ$ Sides AC and AB are $9 (\pm 0.1)$ cm and $6 (\pm 0.1)$ cm respectively Fully correct scale diagram	M1 M1 A1	8
11ii	The bearing of B from C is $41 \pm 3^\circ$	$41 \pm 3^\circ$	A1	
11iii	Distance on map AB, AC and CB is 6cm, 9cm and 7.9 ± 0.2 cm respectively. Total distance on map is 22.9 ± 0.3 cm. Scale of the map is 1 : 30 000 Total distance travelled = 30000×22.9 cm = 687000 cm = 6.87km = 7km to nearest km. ($23.1 \times 30000 = 696000$) ($22.6 \times 30000 = 678000$)	Distance CB on map is 7.9 ± 0.2 cm Multiplies distance on map by 30000 to find distance travelled – mark given whether multiplies distance AB or BC or CA or total Divides by 100 000 to covert cm to km 7km- do not penalise rounding here	A1 M1 M1 A1	
12i	See transparency for plotting of graph.			8
		Uses the scale requested on both axes appropriately Two points plotted correctly, according to the scale used, provided candidate uses a meaningful scale on both axes Another two points plotted correctly, under the same condition as previous mark All points plotted correctly and attempts to connect points by a smooth curve	M1 A1 A1 A1	
12ii	(a) The weight of the kitten after 40 days was 345 ± 10 g (b) When the kitten weighed 280g, the kitten was 24 ± 1 day old		B1 B1	
12iii	Kitten was gaining more weight at birth than when 50 days old Compares steepness of graph at birth and when kitten is 50 days old		B1 M1	
13	Area of A: $6 \times 1.2 + 3 \times 1.2 = 10.8\text{m}^2$ OR $4.2 \times 1.2 + 4.8 \times 1.2 = 10.8\text{m}^2$ Area of B: $\frac{6(3+1.4)}{2} = 13.2\text{m}^2$ B has the largest area	Divides area of A into two or more rectangles, so that the rectangles fill the whole space, A, without overlapping Area of A = 10.8 Finds area of trapezium B in a meaningful way, either by using formula for area or by summing the areas of a partition of B Correct values for areas of A and B and chooses B	M1 A1 M1 A1	4

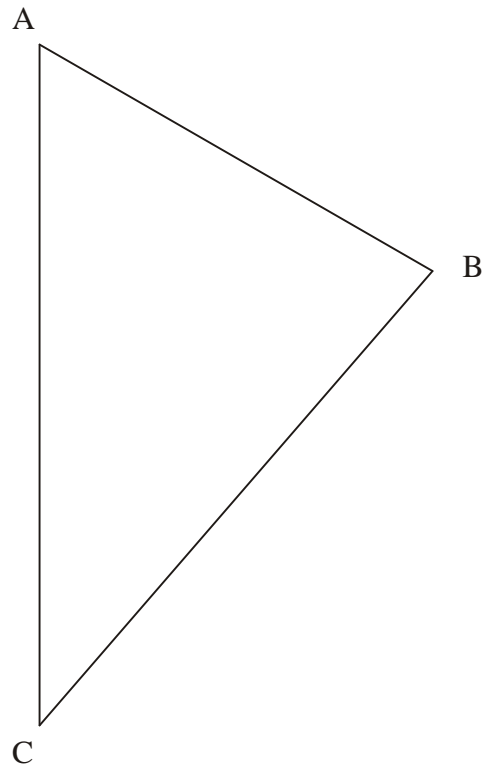
*A copy of the transparencies used is given at the end of the marking scheme

Question No	WORKING	CRITERIA	Marks	Total Mark
<p>14i</p> <p>14ii</p>	<p>X = 1020.20 Y = -180</p> <p>= D6+C7</p>	<p>X = 1020.20. <i>Accept €1020.20 or 1020.2 -180, the negative sign required</i></p> <p>= D6+C7 OR = C7+D6 OR = (C7+D6) OR = (D6+C7)</p>	<p>B1 B1 B1</p>	<p>3</p>
<p>15</p>	 <p>$\frac{x}{2.5} = \sin 68$ $x = 2.5 \sin 68 = 2.5 \times 0.927184 = 2.31796\text{m}$ To ONE decimal place, Answer is 2.3m- if the answer is in metres & Answer is 231.8cm – if given in cm.</p>	<p>Uses sine function appropriately</p> <p>Rearranges formula correctly to determine x</p> <p>$x = 2.3\text{m}$ or more accurate</p> <p>Correct rounding to one dp; 2.3m OR 231.8 cm</p>	<p>M1 M1 A1 A1</p>	<p>4</p>
<p>16i</p> <p>16ii</p>	<p>Hours spent relaxing: $24 - (8 + 10) = 6$</p> <p>Angles representing: 8hr sleeping = 120° 10hr working = 150° 6hr relaxing = 90° See transparency provided for marking</p>	<p>6 hours</p> <p>one correct angle. This is an accuracy mark – do not award mark for correct answer through incorrect working but do not penalise mental methods</p> <p>another correct angle, accuracy mark</p> <p>one angle correctly drawn on pie chart</p> <p>another angle correctly drawn</p> <p><i>Do not penalise if pie chart is not labelled</i></p>	<p>B1 A1 A1 A1 A1</p>	<p>5</p>
<p>17i</p> <p>17ii</p>	<p>The equation Z, i.e. $4(n + 20) = 100$ is true for only one value of n; that is $n = 5$</p> <p>The equation X, ie $4(n + 20) = 4n + 80$ is true for many values of n This eqt is true for any number n.</p>	<p>Identifies Z appropriately</p> <p>Z identified appropriately and $n = 5$</p> <p>Identifies X appropriately</p> <p>X identified appropriately and explains that this eqt is true for any number n</p>	<p>B1 A1 B1 A1</p>	<p>4</p>

Question No	WORKING	CRITERIA	Marks	Total Mark
<p>18i</p> <p>In triangles ABC and AXY, $\angle A$ is common $\angle B = \angle X$ (corresponding \angle^s between parallel lines) $\angle C = \angle Y$ (corresponding \angle^s between parallel lines) OR $\angle C = \angle Y$ (remaining angles of the triangles) So the triangles are similar</p> <p>18ii</p> $\frac{XY}{BC} = \frac{AY}{AC} \quad \text{So} \quad \frac{XY}{5} = \frac{30}{12}$ <p>Also $XY = \frac{150}{12} = 12.5\text{cm}$</p>		<p>A pair of equal angles identified</p> <p>Another pair of equal angles identified</p> <p>Makes an appropriate mention of corresponding \angle^s.</p> <p><i>In Q18i, for candidates just saying "because equiangular" – award 1 mark</i></p> <p>Uses the ratio property of similar triangles to obtain a correct relationship between the sides of the two triangles</p> <p>Manipulates the correct equation for XY appropriately to make XY subject</p> <p style="text-align: right;">$XY = 12.5\text{cm}$</p>	<p>M1</p> <p>M1</p> <p>M1</p> <p>M1</p> <p>M1</p> <p>A1</p>	<p>6</p>
<p>19</p> <p>8% of €500 = €80 value of car after first yr is €720</p> <p>15% of €720 = €1173 value of car after second year is €6647</p> <p>OR Value of car after first yr = $0.92 \times €500 = €720$</p> <p>value of car after second year = $0.85 \times €720 = €6647$</p>		<p>Works out 8% of €500 or 92% of €500 correctly</p> <p>Uses an appropriate method for working out the value of the car after one yr</p> <p style="text-align: right;">€720</p> <p>Uses an appropriate method for working out the value of the car after second yr</p> <p style="text-align: right;">€6647</p>	<p>A1</p> <p>M1</p> <p>A1</p> <p>M1</p> <p>A1ft</p>	<p>5</p>
<p>20i</p> <p>See transparency</p> <p>20ii</p> <p>(a) 1m on land \rightarrow 1.5cm on figure 0.8m land \rightarrow 1.2cm on figure</p> <p>(b) See transparency</p>		<p>Constructs perpendicular bisector, any correct method- no need to use compasses only</p> <p>Drawn line passes through mid-point of AB and is within 3mm of the line on transparency</p> <p>Uses a correct method</p> <p style="text-align: right;">1.2cm</p> <p>Draws path by drawing a line parallel to perpendicular bisector and 6mm away from it on each of its side</p> <p style="text-align: right;">Accuracy</p>	<p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p>	<p>6</p> <p>FNW</p>

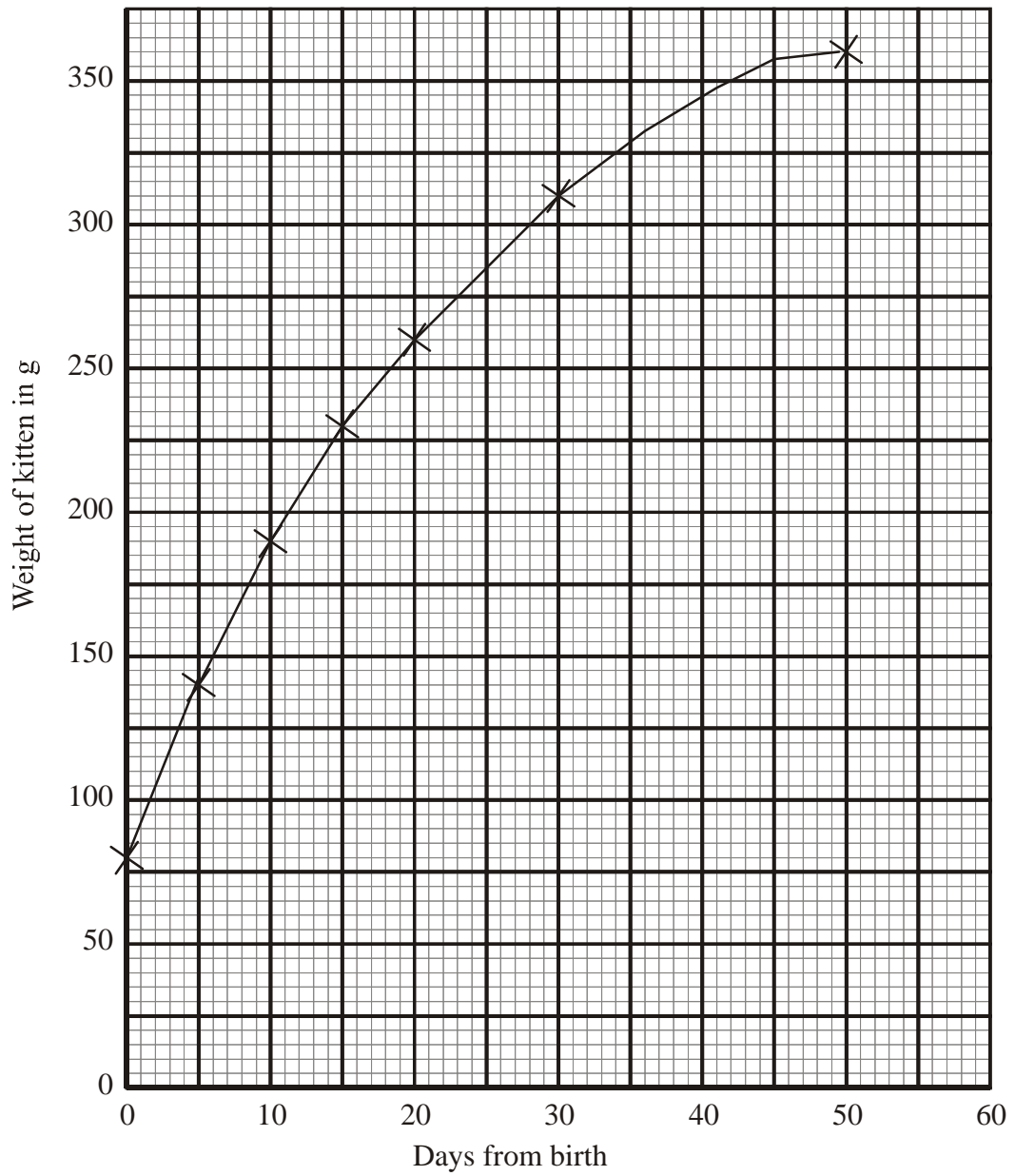
TRANSPARENCIES

11i



TRANSPARENCIES

12



TRANSPARENCIES

16ii



20

