JustMaths

BUMPER "BETWEEN PAPERS" PRACTICE PAPER

SET 2 (OF 3)

FOUNDATION TIER (SUMMER 2017)

EXAMINERS REPORTS & MARKSCHEME

NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT!
YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 IT MAY STILL COME UP ON PAPERS 2 OR 3 ...

WE KNOW HOW IMPORTANT IT IS TO PRACTISE, PRACTISE, PRACTISE .... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDEXCEL NEW 9-1 GCSE MATHS PAPER 1 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...

ENJOY!

MEL & SEAGER

EXAMINERS COMMENTS

Q1. This question was well understood with almost all students being able to gain one mark for attempting to write all the numbers in the same form or for placing 4 of the numbers in the correct order. Of all the conversions students had the most difficulty with converting $\frac{2}{5}$ to a decimal or percentage.

Q2. In part (a) most understood that they needed to find halfway between the coordinates. Some found half of the difference between the co-ordinates rather than the mean. Most candidates found at least one value.

Responses to part (b) were disappointing. Common errors included confused signs and incorrect division, and even mixing *x* and *y* coordinates.

Q3. Surprisingly less than half of students scored anything in part (a). Typically, like on the foundation tier, this was due to forgetting to multiply the second term when expanding the brackets. Those who expanded correctly normally then simplified correctly too. Parts (b) and (c) were answered much better with the vast majority collecting the final 2 marks.

Q4. Fully correct solutions for this inequality question were rare with students often marking a region greater than 3 rather than less than 3 in part (a) and shading the inside of the circle rather than leaving it open or putting circles at both ends of the line with one open and one closed. In part (b) solutions of $x = 5$ were often seen and this gained one mark as the $\geq$ sign was frequently missing.

Q5. Part (a) was answered quite well with many students able to find the range correctly.

In part (b) it was clear that the majority of students knew that the median is the middle number but a surprising number of students failed to work it out correctly. Common incorrect answers were 35, 36, 5 and 6. Some of those who identified the two middle numbers as 35 and 36 gave the answer as 5.5 or as '35, 36'. Many students chose to write out the 24 numbers in a list even though the data is ordered in the stem and leaf diagram.

Part (c) was answered quite well.

Q6. There were many correct answers. The most common omissions were the direction (clockwise) of the centre of rotation. A number of candidates did not pay need to the requirement for a single transformation, usually trying to combine a rotation and a translation.

Q7. In part (a), the majority of candidates scored at least one mark, usually for identifying the transformation as a reflection. Whilst the correct line was often quoted, many were confused or contradicted themselves with incorrect alternatives. For example, "a reflection in the y -axis (y = 0)" was quite common. In part (b), the correct answer was the modal answer. However many correctly rotated the given shape through 90° clockwise but not about the given point. Some candidates offered 'correct' rotations of either 90° anticlockwise or 180°.

Q8. Over one third of students recognised the transformation as an enlargment and gave the correct scale factor but correct identification of the centre of enlargement was very rare indeed. Many students lost marks through giving multiple transformations as answers, mostly in an attempt to give information about the position of the image in the absence of a centre of enlargment. Typically, a translation was described or vector given.

Q9. The majority of candidates knew what was meant by the term "translation" and nearly 1 in 6 candidates could be awarded a mark for translating the triangle albeit often by the wrong vector. Twenty two per cent of candidates gave a fully correct answer. There was no single common error though errors usually involved an incorrect interpretation of one or more of the components of the vector. Very few candidates tried to rotate, reflect or enlarge the triangle and in most cases their transformed shape was congruent to the original shape.

Q10. Most students were able to score at least one mark and many were able to score full marks. Those who split the diagram and wrote the dimensions on their rectangles scored well. A common error when splitting into two small rectangles and one large was in assuming that 6 and 10 were the dimensions of the larger rectangle. The calculation of the total area did prove challenging for some; the most common wrong answer was 70, obtained from 60 + 5 + 5 or 40 + 15 + 15. However, those who made this mistake often went on to achieve 3 out of 5 marks. Clear stages of working are what is needed to approach a problem like this. The presentation of solutions seems to have improved compared with previous years.

Q11. Completely correct answers were rare. Most students were able to make an attempt at adding together the three algebraic terms, but many failed to progress to considering them as a mean, and introduce a division by 3. Of the few that did, there were too many occasions where the answer was given ambiguously (eg $4x+5\div3$).

Q12. This was the first question on the paper that was poorly attempted. The preferred route taken by candidates was to find either AB or AC, which was nearly always correctly done. Most of these candidates then went on to substitute their values into ½abSinC with just a few using the wrong value for the included angle. A few candidates, having found the slant height, used it as the perpendicular height of the triangle when calculating the area using ½ b×h, resulting in the loss of marks. It was rare to see the triangle split into two right angled triangles and tan54 used to find the height, though those who chose this route usually did it well.

Q13. This question was not well done with less than one in five candidates scoring any marks. The question was often either not attempted or an incorrect answer appeared on the answer line without any working shown in the space provided. Many candidates could not deal with or ignored the whole number parts in their calculations. Candidates working with decimals were given credit provided they carried out their working with sufficient accuracy. Many candidates lost marks here because they rounded prematurely. It is perhaps surprising to report that few candidates seemed to use a calculator to help them to complete the question or to check their answers

Q14. Some very good solutions were seen. However, in many cases, arithmetic errors or incorrect calculations led to the loss of one or more marks. It was disappointing to see a number of candidates get to a correct final calculation of 240 − 216 and then give the final answer as 34 or 124 rather than 24. There were two main methods of solution used by candidates. The most popular was to work through in the order given, working out 15% of 240 and ¾ of 240 then subtracting these values from 240. There were two common errors seen by those who took this approach; the first was to work out and use just ¼ of 240 , the other was to work out 15% of 240 and subtract this from 240, leaving 204 and then find ¾ of 204. Both errors were serious enough to mean that candidates were only able to gain the method mark for the correct method to find 15% of 240. The other common method was to add up 15% and ¾ to get 90% and then conclude that 10% of students 'did not know'. Some candidates stopped here, gaining two of the available marks, other candidates went on correctly to evaluate 10% of 240.

Q15. This is a QWC question, and some of the marks were therefore awarded for presentation, in this case evidence of use of the graph. Students are usually taught to draw lines of their graph to show how they are reading off, which led to the award of a mark even if the reading was taken incorrectly. Some failed to gain full credit since they merely presented their readings, or stated "£6 less", without actually answering the question by stating it would have been cheaper.

Q16. There were very few correct answers in part (a). Many students gave answers of 330° or 30° without working. Working accompanying 30° came from 360°- 330°. Very few students drew a diagram; those who did often left out one of the north lines.

In part (b) many students tried to break down the distance and speed obtaining 1 hour for 120 miles and trying to find the time needed for the remaining 80 miles. Unfortunately this method was often unsuccessful due to arithmetic errors. One mark was awarded for 200 ÷ 120 but this often resulted in an incorrect decimal (eg 1.8) which was converted incorrectly. However some marks were available when time conversions were done correctly. Some students tried to use the speed, distance and time formula but used 10 as the time. This often resulted in (10 × 120) ÷ 200. Another common error was to calculate 200 × 120. A small number of students spoiled an otherwise correct response by failing to give an actual time of arrival, giving instead the duration.

Q17. The first part of the question involved abstracting some information from the given travel graph and then using it to calculate the speed. Most students saw that the distance was 9 (km) but then wrote that down on the answer line. A sizeable number used the 9 (km) and the 10 (minutes) to work out a correct value of the speed as 0.9 (km/minute) but did not go on to convert this to km/hour as they thought they had found the answer. A few used the 9 and the 10 to find 10 ÷ 9 = 1.1. Some did have a better understanding that speed can be thought of as how far you go in a unit time so were able to scale up from 9 km in 10 minutes to 6 × 9 = 54 km in one hour. The second part of the question was not well answered as most students did not appreciate the implication of the 21 km. Most students were able to draw the 15 minutes at the rest part of the journey but then went astray on the sloping part. Often they joined (45, 21) to (70, 0). It is tempting to think that some of these students thought the time of return was the same as the time of approach without the stop. Another common error was to join to (80, 0). A few students had the last part of the journey still pointing upwards on the grid, so moving away from home.

Q18. Many found this a challenging question even though part (b) was a straightforward long multiplication. Over 50% of candidates failed to score on either part with a further 12% scoring just 1 mark often for 3.6 × 3 in (a). A common misconception by students was to calculate 32 × 60 as the area of the slabs with an answer of 1920 often seen. Quite a few candidates gained 1 mark in (a) for 6 and 5 or 10.8 but could not get any further.

Candidates were usually more successful in part (b). Many candidates used a grid but often made arithmetic errors. The most common 'grid methods' error was to try to incorporate the decimal point in their grid which led to conceptual errors with no marks scored. A significant number calculated 10 × £8.63 × 3 and added 2 × £8.63 but addition errors often occurred. The method involving breaking down 8.63 and 32 was very popular but in some cases there were place value errors by using 8, 60 and 3 which were not corrected afterwards. Overall, only 12% of candidates scored more than 3 marks over both parts.

Q19 It was evident that many students were not familiar with questions on distance, speed and time that involved more than one stage of working with 210 ÷ 4 = 42 as a very common incorrect response. Many others showed that it took 3 hours to travel between Brockley and Cantham but instead of subtracting this from 5 hours, they added it on to 5 hours. These students then went on to find the average speed by writing (250 + 210) ÷ (5 + 3) = 57.5 which could only score 1 mark. Many other students found the average speed by writing (50 + 70) ÷ 2 = 60. However there were many good responses seen with many arriving at the correct answer from correct working.

Q20. This question was well answered. Students usually used one of two approaches, either using 0.8 as a multiplier to find the value of the van in successive years or by using the rather more long winded approach of finding the 20% depreciation and subtracting it from the value for each year. The most commonly seen incorrect method was for students to subtract a constant £5500 depreciation each year.

Q21. Most students did not realise that they needed to set up a pair of simultaneous equations. The students who did successfully set up two equations sometimes got no further than this. It was surprising to see just how many students mistakenly based their method on

working out £28.20 ÷ 5 and £44.75 ÷ 8. Attempts using a trial and improvement approach were again frequently seen. They were almost always unsuccessful.

Q22. Nearly two thirds of candidates were unable to produce a graph or set of points which merited part marks. There were many blank responses and some cases where candidates took the numbers from $y = 2x - 3$ and -2 to 2 given to form and plot two pairs of coordinates $(2, -3)$ and $(-2, 2)$. Where candidates set up a table of values, many had errors with negative values of x and were unable to make further progress. When an accurate table was used, candidates usually went on to plot correctly with just under 25% gaining full marks.

Q23. From this point in the paper there were an increasing number of non-attempts. In this question it was only a minority who made an attempt, and usually no marks were gained because of an inability to square both sides to remove the square root sign as the first step in processing.

Q24. This question acted as a good discriminator for the more able students who took this paper. The best students worked accurately and reached a fully correct solution, usually by listing multiples of 24 and multiples of 36 until they reached the first common multiple of 24 and 36 higher than 250, ie 288. Unfortunately, many students' working was blighted by poor accuracy. It was common, however, for examiners to be able to award at least 2 marks for a largely accurate attempt to write down multiples of 24 and multiples of 36.

Some students did not take into account that their solution must include making sure that there were enough book marks and dust covers for 250 books, so produced solution such as 3 boxes of book marks and 2 packs of dust covers.

Q25. About two thirds of students were able to score some marks on this question. Of those who did the majority normally scored one mark for finding either *ABD* or *DBC*. A small proportion were then able to finish the problem to find y. However, almost no students gained any communication marks for the reasons they gave.

Q26. It was a surprise to see this plan question cause so many problems. More than 80% of students scored zero, and most of these attempted a 3D drawing rather than a 2D plan.

Q27. This question was well attempted by most students, but more often than not, they did not achieve full marks. Common incorrect responses were from students who did not realise that it was necessary to calculate the interior or exterior angle of the pentagon in order to calculate the value of x. Other common incorrect responses included, assuming all angles in the quadrilateral, *BCDE*, were equal to 72 or that all the angles in the triangle, *ABE*, were equal to 60. Some students simply did 72÷2 which does lead to the correct answer but is clearly an incorrect and incomplete method and gained no marks. Another common incorrect response which gained 1 mark was where students correctly the found the interior angle of a pentagon then incorrectly did 108÷2 =54.

MARKSCHEME

Q1.

PAPER: 1MA0/1F				
Question	Working	Answer	Mark	Notes
	0.25, $\frac{3}{10}$, 0.32, 35%, $\frac{2}{5}$	Correct order	2	M1 for conversion to decimals with one error **or** conversion to percentages with one error **or** conversion to fractions with a common denominator with one error **or** correct order with one error **or** correct in reverse order A1 for correct order in any format

Q2.

		Working	Answer	Mark	Notes
	(a)		(3, 3.5) oe	2	M1 for a correct method to find the value of either the x coordinate or the y coordinate of the midpoint **or** $x = 3$ **or** $y = 3.5$ A1 cao
	(b)		-1.8 oe	2	M1 for correct method to find the gradient OR (+)1.8 A1 for -1.8 oe

Q3.

5MB2H November 2016					
Question	Working	Answer	Mark	Notes	Type
(a)	$7a + 4a - 8b$	$11a - 8b$	2	M1 for $4a - 8b$ A1 for $11a - 8b$	G
(b)		n^{11}	1	B1 cao	C
(c)		$5(x + 2)$	1	B1 cao	G

Q4

PAPER: 1MA0/1F				
Question	Working	Answer	Mark	Notes
(a)		Diagram	2	B2 for fully correct solution with all three aspects with no ambiguity Aspect 1: circle at 3 Aspect 2: circle not shaded Aspect 3: arrow pointing left indicating extension beyond −4 or line extending beyond −4 (B1 for any two aspects)
(b)		$x \geqslant 5$	2	M1 for intention to add 7 to both sides (of inequality or equation) or to divide all 3 terms by 4 as a first step, or (x =) 5 A1 for $x \geqslant 5$ oe

Q5.

Question		Working	Answer	Mark	Notes
	(a)		46	1	B1 cao
	(b)		35.5	2	M1 for identifying 35 and 36 or for 5 and 6 or for 5.5 A1 for 35.5
	(c)		5	1	B1 cao

Q6.

Question		Working	Answer	Mark	Notes
			Rotation 90° clockwise centre (1,1)	3	B1 for rotation B1 for 90° clockwise or 270° anticlockwise B1 for (1,1) (B0 for any combination of transformations)

Q7.

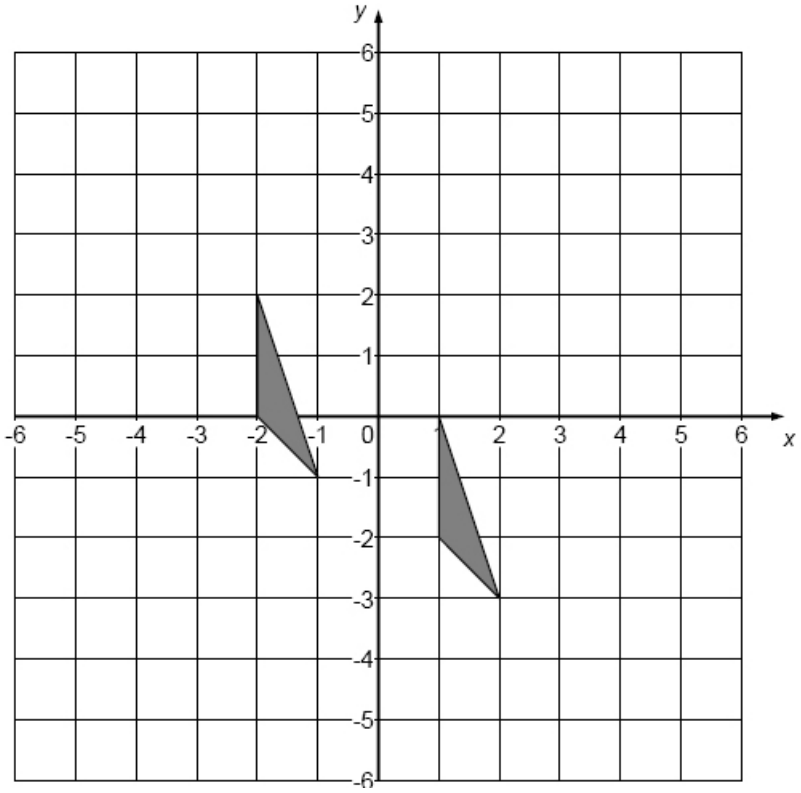
PAPER: 5MB3H_01				
Question	**Working**	**Answer**	**Mark**	**Notes**
(a)		Reflection in $x = 0$ or y-axis	2	B1 for reflection B1 for $x = 0$ or y-axis (NB: a combination of transformations gets B0)
(b)		Triangle (1, 0)(4, 0)(1, –2)	2	M1 for any correct rotation of 90° clockwise OR for any correct rotation about the point (0, 2) A1 for a triangle with vertices at (1, 0), (4, 0) and (1, –2)

Q8.

Paper: 5MB3F_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
			enlargement scale factor 3 centre O	3	B1 for enlargement B1 for scale factor 3 B1 for (centre) O oe NB: B0 for any combination of transformations

Q9.

Question		Working	Answer	Mark	Notes
		Triangle at (–2, 2), (–2, 0),(–1, –1)	Correct figure	2	M1 for any translation A1 for correct translation



Q10.

Question	Working	Answer	Mark	Notes
*		Conclusion (supported)	5	M1 for finding the area of one rectangle which is not 6 × 10 eg 2×2.5 (=5) or 4×10 (=40) or 2.5×6 or 5×2 M1 for a complete method to find the total area eg 5+5+40 or 60−10 (=50) M1 for a complete method to find the number of tins needed eg "50" ÷ 5 ÷ 2.5 (=4) OR for a complete method to find the number of litres needed. eg "50" ÷ 5 (=10) OR for a complete method to find the area covered by 3 tins eg 3×2.5×5 (=37.5) A1 for 50 (m^2) **and** 4 (tins needed) **or** for 10 (litres) **and** 7.5 (litres) **or** for 50(m^2) **and** 37.5(m^2) C1 (dep M2) for a conclusion supported by their calculations

Q11.

Paper_5MB1H_01				
Question	**Working**	**Answer**	**Mark**	**Notes**
		$\frac{x+x+5+2x}{3}$	2	M1 for intention to add x, $x+5$, $2x$ or $4x+5$ seen or ambiguous answer eg "4x+5"÷3 A1 for $\frac{x+x+5+2x}{3}$ oe

Q12.

PAPER: 1MA0_2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
		49.5	4	M1 for $\tan 54 = \frac{\text{height}}{6}$ M1 for (height =) 6 × tan54 (=8.2-8.3) M1 for $\frac{1}{2}$ × '8.258..' × 12 A1 for 49.2 - 50 **OR** M1 for $\cos 54 = \frac{6}{AC}$ M1 for $(AC =) \frac{6}{\cos 54}$ (=10.2(07...)) M1 for $\frac{1}{2}$ × 12 × '10.207' × sin54 A1 for 49.2 - 50 **OR** M1 for $\frac{AC}{\sin 54} = \frac{12}{\sin 72}$ M1 for $(AC =) \frac{12}{\sin 72} \times \sin 54$ (=10.2(07...)) M1 for $\frac{1}{2}$ × 12 × '10.207' × sin54 A1 for 49.2 – 50

Q13.

Question		Working	Answer	Mark	Notes
		$10/3 \div 19/4 = 10/3 \times 4/19$ OR 3.33... ÷ 4.75	$40/57$ or 0.70175(4386...)	2	M1 for $10/3$ oe and $19/4$ oe or 3.33(...) and 4.75 or 40 ÷ 57 or 0.7, 0.70, 0.701, 0.702, 0.7017, 0.7018 A1 for $40/57$ oe or 0.70175(4386...)

Q14.

		Working	Answer	Mark	Notes
			24	4	M1 for 0.15 × 240 oe (= 36) M1 for ¾ × 240 oe (= 180) M1 (dep on both prev M1) for 240 – "180" – "36" A1 cao **OR** M1 for 15(%) + 75(%) (= 90(%)) M1 for 100(%) – "90"(%) (= 10(%)) M1 (dep on both prev M1) for " $10/100$ " × 240 oe A1 cao **OR** M1 for 0.15 + 0.75 oe(= 0.9) M1 for "0.9" × 240 oe (= 216) M1 (dep on both prev M1) for 240 – "216" A1 cao **OR** M1 for 0.15 + 0.75 oe(= 0.9) M1 for 1 – "0.9" oe (= 0.1) M1 (dep on both prev M1) for "0.1" × 240 = 24 A1 cao

Q15.

Paper_5MB1F_01					
Question		Working	Answer	Mark	Notes
*			Yes and reason	2	M1 for a line drawn up from 50 or across from 80 or reading 55 or 74 C1 (dep on M1) for statement including yes and a correct reading eg 55, 74 or £6 less"

Q16.

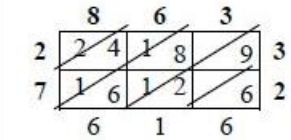
Question		Working	Answer	Mark	Notes
	(a)		150	2	M1 for 180 – (360 – 330) or 180 – 30 or 330 – 180 or a complete diagram showing the bearing of 330° A1 cao
	(b)		11 40	4	M1 for 200 ÷ 120 (=1 2/3 h) M1 for conversion between hours and minutes A1 for 1 h 40 min or 100 minutes B1 (ft dep on M1) for 11 40

Q17.

Question	Working	Answer	Mark	Notes
(a)	9×6	54	2	M1 for a method to find the speed e.g 9 ÷ 10, 9 ÷ 0.16 A1 cao
(b)		Graph completed	3	B1 horizontal line from (30,21) to (45,21) M1 for a complete method to show the return journey is 30 mins or ½ hour evidenced by the line on the graph or by calculation A1 Correct line drawn from Luscoe (x,21) to (x + 30,0)

Q18.

Question	Working	Answer	Mark	Notes
(a)	360 ÷ 60 = 6 300 ÷ 60 = 5 6 × 5 =	Yes and 30	3	M1 for dividing side of patio by side of paving slab eg 360 ÷ 60 **or** 300 ÷ 60 **or** 3.6 ÷ 0.6 **or** 3 ÷ 0.6 **or** 6 and 5 seen **or** 6 divisions seen on length of diagram **or** 5 divisions seen on width of diagram M1 for correct method to find number of paving slabs eg (360 ÷ 60) × (300 ÷ 60) oe **or** 6 × 5 **or** 30 squares seen on diagram (units may not be consistent) A1 for Yes **and** 30 (or 2 extra) with correct calculations **OR** M1 for correct method to find area of patio **or** paving slab eg 360 × 300 **or** 108000 seen **or** 60 × 60 **or** 3600 seen **or** 3.6 × 3 **or** 10.8 seen **or** 0.6 × 0.6 **or** 0.36 seen M1 for dividing area of patio by area of a paving slab eg. (3.6 × 3) ÷ (0.6 × 0.6) oe (units may not be consistent) A1 for Yes **and** 30 (or 2 extra) with correct calculations

	(b)	1726 25890 27616  800 60 3 30 24000 1800 90 2 1600 120 6 24000 + 1800 + 90 + 1600 + 120 + 6 = 27616	276.16	3	**OR** M1 for method to find area of patio and area of 32 slabs eg. 60 × 60 × 32 **or** 360 × 300 M1 for method to find both areas eg. 60 × 60 × 32 **and** 360 × 300 (units may not be consistent) A1 for Yes **and** 115200 **and** 108000 **OR** Yes **and** 11.52 **and** 10.8 **NB:** Throughout the question, candidates could be working in metres or centimetres M1 for complete correct method with relative place value correct. Condone 1 multiplication error, addition not necessary. **OR** M1 for a complete grid. Condone 1 multiplication error, addition not necessary. **OR** M1 for sight of a complete partitioning method, condone 1 multiplication error. Final addition not necessary. A1 for digits 27616 A1 ft (dep on M1) for correct placement of decimal point after addition (of appropriate values) (SC: B1 for attempting to add 32 lots of 8.63)

Q19.

PAPER: 5MB2H_01					
Question		**Working**	**Answer**	**Mark**	**Notes**
			62	4	M1 for B to C time = 210 ÷ 70 (= 3 h) M1 for A to B dist = (5 − "3") × 50 (= 100) M1 (dep on M1) for average speed = total distance ÷ total time or 210 + "(2 × 50)" ÷ 5 A1 cao

Q20 .

Paper_ 5MB1H_01					
Question		Working	Answer	Mark	Notes
		$\frac{11264}{27500}$ (= 0.4096) $0.8^n = 0.4096$	4	2	$\frac{11264}{27500}$ (= 0.4096) M1 for and 0.8^n evaluated for n = 2 OR attempt to evaluate 27500×0.8^n for at least one value of n (not equal to 1) OR finding at least 2 deductions, ie 2 of 5500, 4400, 3520 A1 for 4 cao

Q21.

PAPER: 5MB3H_01					
Question		Working	Answer	Mark	Notes
*		eg $2a + 3c = 28.2$ $3a + 5c = 44.75$ $6a + 9c = 84.6$ $6a + 10c = 89.5$ $c = 4.9$ $2a + 14.7 = 28.2$ $2a = 13.5$ $a = 6.75$	Adult ticket £6.75 Child ticket £4.90	5	M1 for correctly stating both equations algebraically M1 for correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for correct substitution of their found value to find other variable OR (indep) correct process to eliminate second variable (condone one error in arithmetic) A1 for 6.75 or 4.9 C1 for Adult ticket £6.75 and Child ticket £4.90 in correct money notation

Q22.

Question		Working	Answer	Mark	Notes
		Table of values x: −2, −1, 0, 1, 2 y: −7, −5, −3, −1, 1 OR Using $y = mx + c$ Gradient 2 intercept –3	Single line drawn from (–2, –7) to (2, 1)	3	**(Table of values)** M1 for at least 2 correct attempts to find points by substituting values of x. M1 (dep) ft for correctly plotting at least 2 of their points (any points plotted from their table must be plotted correctly) A1 for the correct line from (-2, -7) to (2, 1) OR **(No table of values)** M2 for at least 2 correct points (and no incorrect points) correctly plotted or for a line segment of the graph of $y = 2x – 3$ drawn (ignore any additional incorrect line segments) [M1 for at least 3 correct points plotted with no more than 2 incorrect points] A1 for the correct line from (-2, -7) to (2, 1) OR **(Use of $y = mx + c$)** M2 for a single straight line of gradient 2, passing through (0, -3) [M1 for a single straight line of gradient 2 or for a single straight line passing through (0, -3)] A1 for the correct line from (-2, -7) to (2, 1)

Q23.

5MB3H_01 November 2015					
Question		Working	Answer	Mark	Notes
			$t = \frac{ap^2}{3}$	3	M1 for squaring both sides of the equation as the first step M1 (dep) for isolating the t term A1 for $t = \frac{ap^2}{3}$ oe

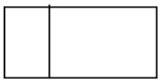
Q24.

Question		Working	Answer	Mark	Notes
		24, 48, 72, 96, 120, 144, 168, 192, 216, 240, 264, **288** 36, 72, 108, 144, 180, 216, 252, **288**	12 boxes of book marks 8 packs of dust covers	4	M1 attempts multiples of either 24 or 36 (at least 3 but condone errors if intention is clear) M1 attempts multiples of both 24 and 36 (at least 3 but condone errors if intention is clear) M1 (dep on M2) for a division of 250 or 288 by 24 or 36, or counts up "multiples" (implied if answers reversed) A1 for 12 boxes of book marks, 8 packs of dust covers. Accept (15b, 10p), (18b, 12p) etc (SCB1 for (11b, 7p))

Q25.

5MB2H November 2016					
Question	Working	Answer	Mark	Notes	Type
*	(180 – 120) ÷ 2 = 30 (180 – 30) ÷ 2	75°	4	M1 for method to find angle *ADB* (or angle *ABD*) (180 – 120) ÷ 2 A1 for 75 C1 (dep on M1) for Alternate angles are equal **or** co-interior (allied) angles add up to 180° C1 (dep on M1) for Base angles of an isosceles triangle are equal **and** Angles in a triangle add up to 180°	E

Q26.

5MB2H November 2016					
Question	Working	Answer	Mark	Notes	Type
		Plan 	2	M1 for 7 × 4 rectangle A1 for correct plan with dividing line	G

Q27

PAPER: 5MB3F_01					
Question		Working	Answer	Mark	Notes
			36	3	M1 for 3×180 ÷ 5 (=108) or 540 ÷ 5 (=108) or for a correct calculation to find the exterior angle eg 360 ÷ 5 or 180 – 360 ÷ 5 (=108) M1 (dep) for "108" – 72 or 180 – "360 ÷ 5" – 72 or "360 ÷ 5" ÷ 2 A1 cao OR M1 for $x + x + (72 + x) = 180$ oe or $5(x + 72) = 540$ oe M1 for $(x =)\ (180 - 72) \div 3$ oe or $(x =)\ 540 \div 5 - 72$ oe A1 cao