JustMaths

BUMPER "BETWEEN PAPERS" PRACTICE PAPER

SET 1 (OF 3)

HIGHER 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.A good proportion of the students were able to add the two fractions correctly. The majority of those who attempted to use a suitable common denominator were successful although some made errors when writing the fractions to a common denominator. Many students, however, did not appreciate the need for a common denominator and the most common incorrect answer was $\frac{6}{12}$, from adding the numerators and adding the denominators.

Q2. The majority who attempted this question made the fatal error of assuming that the opposite angles of a cyclic quadrilateral were equal, rather than supplementary.

Q3. Most students were able to score one mark for showing an understanding of the recurring decimal notation. Many were then able to find two appropriate decimals to subtract in order to write x as a fraction. Some students, having seen the solutions to this type of questions before, guessed at answers such as 45/99 and failed to gain any credit. A number of students attempted to work 'backwards' and divide 1 by 22. This method was not acceptable as an algebraic approach was required by the question.

Q4. Only a minority of students chose to derive a set of simultaneous equations to solve. The majority of students used a trial and improvement approach to the solution, which could only be credited on giving the correct answers. Common incorrect answers scoring 0 marks were £7.50 (from 30÷4) and £5.50 (from 22÷4).

Q5. The small proportion of able students who gave a fully correct solution to part (a) of this question usually used the factorisation method rather than that of substituting into the formula. Most students could not identify a suitable method but resorted to trial and improvement or inappropriate manipulation of the equation. In part (b) only a small number of students could either get a correct answer or identify a correct strategy to deal with the equation.

Q6. On too many occasions the plotting was at the end of the interval, rather than at the midpoint. A few introduced extraneous lines (eg joining the first and the last point). In part (b) only a few gave the frequency instead of the class interval.

Q7.A small proportion of students answered this question apparently without hesitation and a few of these students gave a concise clear assumption. However, for most students the working space contained many calculations few of which were relevant to a correct solution.

Q8. This question was not done well with most candidates gaining either 3 marks or 0 marks. Few candidates realised that they needed to use the 100° given in the pie chart to calculate the amount raised in Year 7. Most candidates only used the numbers in the table. A common incorrect answer here was (£)193.75. Although not penalised, candidates should be advised to take greater care with the use of money notation. Answers such as £137.5, 137.50 and 137.5, were very common.

Q9. This question was not well done. Less than 1 in 10 candidates scored full marks with a further 2 in 10 candidates scoring part marks. The most successful candidates used a common sense approach realising that at an average speed of 50 mph Aysha would cover a distance of 25 miles in half an hour and that for the second part of the journey, a speed of 60 mph is equivalent to an average of 1 mile per minute.

A significant proportion of candidates earned the mark available for the time it took Aysha to drive from A to B, the first part of her journey. Fewer candidates obtained the correct time for the second part of the journey. Many of them gave the time taken to travel from B to C as 24 minutes. Evidence seen suggested that these candidates had worked out 60 ÷ 25 (=2.4) and interpreted their answer as 24 minutes. Many of these candidates went on to work out "30 – 24" and so earned a second mark for working out the difference of their times (with at

least one correct).

Another error commonly seen was for candidates to divide speed by distance getting answers of 2 and 2.4 and then interpreting the difference as 40 minutes. Candidates often made errors converting between units of time and some weaker candidates either multiplied the speed by the distance for each part of the journey or simply found the difference between the two speeds giving their answer as "10".

Q10. The essence of this question was the need to make comparisons of two distributions. The number of marks awarded was dependent on the quality of the answer. Candidates needed to realise that the graphs did not provide information about the actual heights, but rather a distribution, and therefore used of median, range, IQR, etc. were most appropriate. Candidates who worked out and listed these values without any comparison gained no marks. The better quality responses not only worked these out, stated which was more (or less) than the other, but was also phrased within the context of the question and made reference to heights of children.

Q11. 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.

Q12. This proved to be a challenging question. However, candidates were resourceful in their methods. These included every means of comparison possible, many of which were correctly executed. The most common was Lisa – 9mph from the graph and Martin – 10mph converted from the 16kmph. The majority who gained marks for conversion did so using Martin's information and only a few candidates obtained it for Lisa – 14.4 kmph. There seems to be a wider knowledge of 5 miles = 8 km and 1 mile=1.6 km than in previous years although some candidates did not know what to do with it. Where calculations were faulty candidates often got a mark for using the same units of time or distance. Some missed the obvious conversions and opted for calculations that were far more taxing arithmetically. Division caused a problem with many writing speed and time calculations upside down, misusing the triangle they had memorised.

A few candidates used the diagram to draw a line for Martin, usually correctly; however, most did not mention the line being steeper in their final statement hence a full method was not seen. Too many candidates only wrote m for units which could have meant miles or minutes or even metres. Some candidates did not write a concluding statement; just a name or a squiggle and this cannot be classified as good communication.

The majority of candidates did score at least part marks on this question.

Q13. The first two parts of the question were basically about how well candidates knew their trigonometric curves. The response was very poor with very few being able to give the correct coordinates. Surprisingly for this target level, there were candidates who gave the correct values, but reversed – for example (0, 180) instead of the correct (180, 0)

The next part of the question was meant to assess how well candidates understood transformations when applied to the cosine curve. Again, correct answers were few and far between as most candidates did not seem to appreciate the basic structure of $y = \cos x$ as evidenced by the first part of the question with the sine curve.so were unable to relate the transformed curve to the original one.

Q14. Many candidates were able to score full marks. They generally drew an additional column for the table in the question and recorded the frequency densities there. Only occasionally did this approach lead to fewer than full marks. There were a few candidates who used an area approach, although not as successfully.

Q15. The scale of the box plot was simple, yet too many candidates mis-read values when either drawing the box plot, or completing the table. Part (b) was not well understood, as

evidenced by estimates, guesses, and proportional calculations involving 8 and 60. Candidates need to be reminded that box plots effectively divide the distribution of the data into four parts.

Q16. Some good answers in this question, with many gaining at least 2 marks.

Q17. Many candidates had little or no understanding of surds. In part (a) those who multiplied the numerator and denominator by $\sqrt{5}$ scored one mark and many went on to give their answer as $15\frac{\sqrt{5}}{5}$ and scored the second mark. Some candidates attempted to simplify $15\frac{\sqrt{5}}{5}$, but these attempts were not always successful.

In part (b) relatively few candidates multiplied out the brackets to give four correct terms connected by addition signs. Some made careless errors, e.g. $1\times1 = 2$ and $\sqrt{3}\times\sqrt{3} = 9$. Most of the candidates who simplified the four terms to $4 + 2\sqrt{3}$ were able to identify the value of *a* and the value of *b* although some gave the value of *b* as $2\sqrt{3}$. A common error was for the expansion of the brackets to result in only two terms, 1×1 and $\sqrt{3}\times\sqrt{3}$

Q18. 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.

Q19. Part (a) was well attempted by most candidates with many scoring full marks. In most cases those who didn't score full marks either wrote an expression containing $4n$ scoring B1 or wrote $n + 4$ scoring B0. There were very few responses seen with other coefficients of n.
Part (b) was well attempted by most candidates though more candidates were successful in part (a). The most common incorrect response was 907, however, those candidates who presented full working out and initially wrote $3 \times 10^2 + 7$ followed by $30^2 + 7$ did earn at least M1, unfortunately in most cases candidates wrote $3 \times 10 = 30$, $30^2 = 900$, $900 + 7 = 907$. Candidates who tried to generate all the terms of the sequence were usually unsuccessful.

Q20. Only the most able students gained full marks in this question owing to the multi-step nature of the problem. The majority of students scored one mark for a correct area after splitting the given shape, usually for 3.4×3 or 2.2×3 but were often unable to correctly complete the calculation of the overall floor area. Some students treated the floor as a trapezium or two trapezia (by splitting vertically down the centre) and failed to score any marks at all for the area. Many students could not find the area of a triangle correctly. After finding a floor area, many students ignored the fact that one pack of tiles could cover 2 m2 and used their area when working out cost. Those who did divide their area by 2 to find the number of packs often went on to use a non-integer value for the packs losing them a further method mark. It was not uncommon for students to then ignore the 25% discount and compare Mary's £100 with an undiscounted price. Again many 'build up' methods for calculating percentage failed as a result of both arithmetic error and failure to explain their method. Many students did not appear to have any structure to their working, with calculations scattered all over the page. Students who worked logically and structured their calculations generally scored better.

Q21. Few students scored full marks in this question but many scored 1 mark. Most of these students were able to expand the brackets to obtain 4 terms, but many made errors in dealing with the surds or with the signs. Common errors here were $3 \times \sqrt{2} = \sqrt{6}$ and $2 \times \sqrt{2} = \sqrt{4}$.

Q22. The first part of this question was answered very well. It was rare to see an incorrect answer. A variety of approaches were used. The most common error made was in calculating

the value of 10 ÷ 8. Students often evaluated this as 1.2 and gave their final answer as 14.4. These students often gained partial credit for their working. Those students who used the fact that 12 portions required one and a half times the recipe quantities were generally more successful in scoring both marks in this part of the question.
Part (b) of the question was not answered well. Most students worked out that 3.75 pounds of apples were required to make 12 pasties but relatively few of these students could convert 2 kg to pounds with sufficient accuracy and reach a valid conclusion.

Q23. There was evidence that some candidates did not read the question with enough care with many calculating the volume instead of the surface area. Of those who worked with area, common errors included poor arithmetic, adding together edges instead of areas, and a failure to include all 6 sides.

Q24. Part (a) had the instruction 'You must show your working', within the demand. When this instruction is present it is vital that candidates do show all their working; in this case a correct answer of 'yes' with no correct supporting working scored no marks. The vast majority of students did show working. There was frequently confusion over conversion between metres and centimetres and, more frequently, between cm^2 and m^2. Provided all other working was correct, candidates were only penalised for either inconsistent units or incorrect conversions in the final mark. There were two favoured methods of solution. One of these was to work out the area of the patio and the area of the 32 slabs. In this method the most common error occurred when attempting to find the area of the 32 slabs, 32 × 60 rather than 32 × 60 × 60 was frequently seen. Accuracy in arithmetic was also a problem with 60 × 60 seen as 1200 and 0.6 × 0.6 given as 3.6 on many occasions. The most successful method was to find the number of slabs needed by dividing the corresponding lengths but, again, the necessary arithmetic did cause some problems.

Many different methods to carry out the necessary multiplication were seen in (b). When candidates choose to use a build up method for their calculation it is important that they check that they are working out 32 × 8.63; frequently the complete calculation was actually for 20 × 8.63 or 24 × 8.63 or 31 × 8.63 or 30 × 8.63 in which case no marks could be awarded. Candidates who attempted to partition the numbers prior to calculation sometimes made errors in dealing with the decimal place and used 8 rather than 800 so came out with a very wrong answer.

Q25. This was successfully completed by most candidates. For the rest the first problem was to decide the number of packages and parcels; those misinterpreting the ratio frequently gave incorrect answers of 30 and 10. A significant number spoilt their work by finding 32×25.6.

Q26. Most students approached this question by adding 9 minutes many times to 6.45 and then adding 12 minutes to 6.45. There were some arithmetic errors found when using this approach. Those that were able to do this accurately tended to get the correct answer of 7.21 am. Some students approached this by trying to find the LCM of 9 and 12 but many of these who found the LCM was 36 then failed to add this on to 6.45 am.

Q27. There were too many hurdles for the few that attempted this question. Use of an incorrect formula, failure to include the straight edges, processing and rounding errors all resulted in few providing an acceptable final answer. Fortunately, at this stage in the paper, most students who attempted the question provided working out that was clear enough for some method marks to be awarded.

Q28. The 1.5m height of the wall confused a significant number of students who did not appreciate that this was a simple ratio question. Dividing 300 by 6.5 after adding the 5 and 1.5 was not uncommon. There were also attempts to scale up from 5 to 8 by doubling or halving; often the error here was in finding the bricks for 0.5m incorrectly. A surprisingly large number of students misinterpreted the question and gave the answer 480 - even after finding that 180 extra bricks were needed. The most successful method was to divide 300 by 5 and

then multiply by 3 or by 8, though dividing by 7.5 and then multiplying by 4.5 or 12 was also common. Students appeared to need more experience of questions with extra information that may not be needed in their solution.

MARK SCHEME

Q1.

PAPER: 5MB2F_01					
Question		Working	Answer	Mark	Notes
			$\frac{8}{9}$	2	M1 for using a suitable common denominator with at least one of two fractions correct A1 for $\frac{8}{9}$ or equivalent fraction

Q2.

5MB3H_01 November 2015					
Question		Working	Answer	Mark	Notes
*			56 supported	3	M1 for 180 – 85 (=95) A1 for 56 C1 for opposite angles of a cyclic quadrilateral add up to 180

Q3.

PAPER: 1MA0_1H				
Question	Working	Answer	Mark	Notes
		Proof	3	M1 for $(x =)$ 0.04545(...) or $1000x = 45.4545(...)$, accept $1000x = 45.\dot{4}\dot{5}$ or $100x = 4.54545(...)$, accept $100x = 4.5\dot{4}$ or $10x = 0.4545(...)$,accept $10x = 0.\dot{4}\dot{5}$ M1 for finding the difference between two correct, relevant recurring decimals for which the answer is a terminating decimal A1 (dep on M2) for completing the proof by subtracting and cancelling to give a correct fraction eg $\frac{45}{990} = \frac{1}{22}$ or $\frac{4.5}{99} = \frac{1}{22}$

Q4.

PAPER: 1MA0_2H					
Question		Working	Answer	Mark	Notes
		$3x + y = 30$ $x + 3y = 22$	8.50 4.50	4	M1 for forming two algebraic equations M1 for a correct process to eliminate one variable (condone one arithmetic error) M1 (dep) for substituting found value in one of the equations or appropriate method after starting again (condone one arithmetic error) A1 for 8.5(0) and 4.5(0)

Q5.

PAPER: 5MB3H_01				
Question	Working	Answer	Mark	Notes
(a)		5 and −7	3	M1 for $(x \pm 5)(x \pm 7)$ M1 for $(x - 5)(x + 7)$ A1 cao OR M1 for correct substitution into formula M1 for reduction to $\frac{-2 \pm \sqrt{144}}{2}$ A1 cao
(b)		$\pm\sqrt{3}$	4	M1 for multiplying through by a common denominator eg by $(x + 1)(2x + 3)$ M1 (dep) for reduction eg to $4x + 6 + x^2 + x$ or $2x^2 + 3x + 2x + 3$ M1 for $x^2 - 3$ (= 0) A1 cao for both answers; accept decimals to at least 2 dp

Q6.

Paper_5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		Frequency polygon	2	B2 for fully correct frequency polygon - points plotted at the midpoint (B1 for all points plotted accurately but not joined with straight line segments) **or** all points plotted accurately and joined with last joined to first to make a polygon **or** all points at the correct heights and consistently within or at the ends of the intervals and joined (can include joining last to first to make a polygon) NB: ignore parts of graph drawn to the left of the 1st point or the right of the last point
(b)		$160 < h \leqslant 180$	1	B1 for $160 < h \leqslant 180$ (could be ft from diagram)

Q7.

5MB1H_01 November 2015				
Question	Working	Answer	Mark	Notes
		400 and correct assumption	4	M1 for partial working eg $\frac{60}{12}$ oe or 20% or $\frac{1}{5}$ seen or $80 \div 12$ (= 6.66..) or $\frac{12}{80}$ oe M1 for complete method eg $\frac{80 \times 60}{12}$ or 80×5 or $6.66.. \times 60$ or $\frac{12}{60} = \frac{80}{n}$ oe or $80 \div 0.2$ oe A1 cao C1 for a correct mathematical assumption eg population has not changed overnight or mark which does not wear off or sample is random etc

Q8.

Question	Working	Answer	Mark	Notes
	900 ÷ 360 2.5 × 100 900 − 250 − 225 − 125 − 162.50	£250, £137.50	3	M1 for (900÷360) × 100 or (100÷360)×900oe or (55÷360) × 900oe or implied by one correct value A1 for (£)250 or (£)137.5(0) seen A1 for (£)250 and (£)137.5(0) in correct positions

Q9.

Question		Working	Answer	Mark	Notes
		25 ÷ 50 = 0.5 h = 30 min 25 ÷ 60 = 0.416 h = 25 min	5	3	M1 for 25 ÷ 50 **or** $^{60}/_{50}$ × 25 **or** 30 (min) **or** 0.5(h) **or** 25 ÷ 60 **or** $^{60}/_{60}$× 25 **or** 25 (min) **or** 0.41(6)(h) M1(dep) '0.5' –'0.41(6)'**or** '30' – '25' A1 cao OR M1 for 60 ÷ 25 (= 2.4) and 60 ÷ "2.4" **or** 50 ÷ 25 (= 2) and 60 ÷ "2" M1(dep) for '30' – '25' A1 cao

Q10.

5MB1H_01					
Question		Working	Answer	Mark	Notes
			two comparisons	2	B1 for one correct complex comparison which summaries the data, with supporting correct numerical values B1 for a different correct complex comparison which summarises the data, with supporting correct numerical values and given in context

Q11

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)

Q12.

Question		Working	Answer	Mark	Notes
		Lisa = 4½ miles in 30 min = 9 mph Martin = 16 × 5 ÷ 8 = 10 mph Or Lisa = 9 × 8 ÷ 5 = 14.4 km/h Martin = 16 km/h Or For 5miles Lisa took 33 minutes 10 miles is 66 minutes Martin = 16 × 5 ÷ 8 = 10 miles in 1 hour Or Martin 16 km/h = 10 mph = 5 miles in 30 minutes Draw travel graph for Martin Martin's graph steeper (or Lisa = 4.5 miles in 30 minutes)	Martin faster + calculation or graph	4	M1 for Lisa's speed or distance × 8 ÷ 5 or Martin's 16 × 5 ÷ 8 A1 for one correct conversion from metric to imperial or imperial to metric for their speed or distance (units should be seen) M1 for using the same time period or same distance C1 (dep on M2) concluding statement + both answers correct with units OR M1 for plotting (30, 5) on the graph A1 for a correct line to show Martin's speed M1 for converting 16 km/h to 10 mph oe C1(dep on M2) for concluding statement fully supported by working ie Martin is faster because his graph is steeper oe

Q13.

PAPER: 1MA0_1H					
Question		Working	Answer	Mark	Notes
	(a)		180, 0	1	B1 for 180, 0 Accept π, 0
	(b)		270, –1	1	B1 for 270, –1 accept $\frac{3\pi}{2}$, –1
	(c)		$a = 2$ $b = 3$ $c = 1$	3	B1 cao B1 cao B1 cao

Q14.

		Working	Answer	Mark	Notes
	(a)		10 and 18	2	B2 Two correct values (B1 one correct value)
	(b)		Bars at heights 3cm and 2cm	2	B2 for two correct bars (B1 for one correct bar)

Q15.

5MB1H_01					
Question		Working	Answer	Mark	Notes
	(a)(i)		11, 22	3	B3 for all of: median 11 drawn, greatest number 22 drawn, smallest number 3 in table, upper quartile 17 in table
	(ii)		3, 17		(B2 for 3 correct, B1 for 2 correct)
	(b)		45	2	M1 for 0.75×60 or 60 – 0.25×60 oe or 15 seen (may be seen in diagram) A1 cao

Q16.

5MB1H/01 June 2015				
Question	Working	Answer	Mark	Notes
		A: $y = 2^x$ B: $y = 10 - 2x$ C: $y = 8x - 2x^2$	3	B1cao B1cao B1cao

Q17.

Question		Working	Answer	Mark	Notes
	(a)	$\frac{15}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}}$	$3\sqrt{5}$	2	M1 for $\frac{15}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}}$ A1 for $\frac{15\sqrt{5}}{5}$ or better
	(b)	(1 + √3)(1 + √3) = 1 + √3 + √3 + 3 = 4 + 2√3	4,2	2	M1 for 1×1 + 1×√3 + 1×√3 + √3×√3 oe A1 cao

Q18.

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

Q19

		Working	Answer	Mark	Notes
	(a)		$4n - 3$	2	B2 for $4n - 3$ oe (B1 for $4n + k$, $k \neq -3$ or $n = 4n$-3)
	(b)		307	2	M1 for substitution of 10 into $3n^2+7$ ($=3\times10^2+7$) A1 cao

Q20.

PAPER: 1MA0_1H				
Question	Working	Answer	Mark	Notes
*		Has enough (with evidence)	5	M1 for splitting the shape (or showing recognition of the "absent" triangles) and using a method to find the area of one shape M1 for a complete method to find the total area, (= 9 m^2) M1 (dep on M1) for a method to find the number of packs required from their total area, eg. "9" ÷ 2 = 4.5 rounded up to 5 M1 for a method to find 75% of 24.80 or 75% of the cost of their total number of packs, eg. 24.80 × "5" × $\frac{75}{100}$ (= 93) or 24.80 × $\frac{75}{100}$ (= 18.6) C1 for a conclusion supported by fully correct answers, eg. showing 9 (m^2), 5 (packs) and 93 or 7 (from 100 – 93) OR M1 for method to find 75% of £24.80, eg. 24.80 × $\frac{75}{100}$ (= 18.6) M1 for method to find total number of packs Mary can buy, eg. 100 ÷ "18.60" = 5.3.... truncated to 5 or 10 (m^2) M1 for finding area of one relevant shape or showing how one pack (2 m^2) can fit in the diagram M1 (dep on previous M1) for complete method to show that 5 packs can cover the floor C1 for a conclusion supported by fully correct answers, showing the capacity (10) greater than total area (9)

Q21

PAPER: 1MA0_1H					
Question		Working	Answer	Mark	Notes
		$3-\sqrt{2}+3\sqrt{2}-\sqrt{2}\sqrt{2}$	$1+2\sqrt{2}$	2	M1 for 4 terms correct ignoring signs or 3 out of no more than 4 terms correct A1 cao

Q22.

Question		Working	Answer	Mark	
	(a)		15	2	M1 for $\frac{10}{8}$ (= 1.2…) A1 cao
	(b)		$3\frac{3}{4}$ and 4.4	3	B1 for 1 kg = 2.2 lbs M1 for $2\frac{1}{2} \times 1.5$ $(= 3\frac{3}{4})$ oe, eg $2\frac{1}{2} \times \frac{12}{8}$ or $2\frac{1}{2} + 1\frac{1}{4}$ A1 for $3\frac{3}{4}$ and 4.4 oe (lbs.) OR B1 for 1 kg = 2.2 lbs M1 for "2.2" × 2 ÷ 2.5 × 8 oe A1 for 14(.08)

Q23.

		Working	Answer	Mark	Notes
			40.5	3	M1 for 1.5×6 or 1.5 ×1.5 M1 for adding area of 5 or 6 faces provided at least 3 are the correct area A1 cao NB: anything that leads to a volume calculation 0 marks.

Q24.

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 (may be on a diagram) **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 **OR** M1 for method to find area of patio or area of 32 slabs eg. 60 × 60 × 32 **or** 360 × 300 M1 for method to find both area of patio **and** area of 32 slabs

	(b)	1726 25890 27616 8 6 3 2 | 24 | 18 | 9 | 3 7 | 16 | 12 | 6 | 2 6 1 6 | | 800 | 60 | 3 | | 30 | 24000 | 1800 | 90 | | 2 | 1600 | 120 | 6 | 24000+1800+90+1600+120+6 = 27616	276.16	3	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)

Q25.

Question		Working	Answer	Mark	Notes
		40 ÷ 5 = 8 8 × 1.5 = 12 (37.6–12)÷(40–8) = 25.6÷32 =	0.8	4	M1 for 40 ÷ 5 (=8) or at least 3 multiples of 1:4 M1 "8" × 1.5 (=12) M1 (37.6 – "12") ÷ (40 – "8") or 25.6 ÷ 32 A1 for 0.8, accept 800 g OR algebraic approach: M1 for (eg) k=4c and k+c=40 M1 for (eg) 1.5c+wk=37.6 M1 for "8"×1.5 + "32"×w = 37.6 A1 for 0.8, accept 800 g

Q26.

5MB2H_01 November 2015					
Question		Working	Answer	Mark	Notes
			7.21 (am)	3	M1 for listing multiples 9,18,27,36 and 12,24,36 (condone 1 arithmetic error) or method to find LCM M1 for identifying 36 as LCM A1 cao OR M1 for listing times 6.54, 7.03, 7.12, 7.21 or for listing times 6.57, 7.09, 7.21 (condone one arithmetic error) M1 for listing times 6.54, 7.03, 7.12, 7.21 **and** 6.57, 7.09, 7.21 (condone one arithmetic error) A1 cao

Q27.

5MB3H_01 November 2015					
Question		Working	Answer	Mark	Notes
			20.94	5	M1 for method to find circumference of circle, eg. $2\times\pi\times2.45$ or $\pi\times4.9$ (= 15.393....) M1 (dep) for $\frac{105}{360}\times$ "15.393 ... (= 4.4898...) M1 for "4.4898.." ÷ 1.75 (= 2.565...) or "4.9" ÷ 1.75 (= 2.8) oe or "9.3898…" ÷ 1.75 (=5.3656…) M1 for total cost = "6" × 3.49 (=20.94) or cost of arc or straight edges = "3" × 3.49 (=10.47) A1 cao

Q28

PAPER: 1MA0/2H				
Question	Working	Answer	Mark	Notes
		180	3	M1 for a correct start to the process, eg 300 ÷ 5 (= 60) or 300 ÷ (5 × 1.5) (= 40) or 8 ÷ 5 (= 1.6) or 5 ÷ 8 (= 0.625) M1 for a complete method that will lead to the number of bricks needed to build the wall (= 480) or for a complete method that will lead to the number of extra bricks needed to build the wall, eg 300 ÷ 5 × 3 A1 cao