

**Mathematics B (MEI)**

General Certificate of Secondary Education **GCSE J519**

**Report on the Units**

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**June 2009**

**J519/MS/R/09**

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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## Chief Examiner's Report

The change from three tiers of entry to two continues to have some effect. At Higher Tier examiners report that there are still candidates who would be better suited to Foundation Tier although thankfully this seems to be reduced. Inevitably it also means that some candidates are not prepared for some of the harder topics like vectors and surds. This seems likely to continue in order to give B grade candidates the chance to achieve their potential.

The QCA requirement is that 50% of the paper be targeted at the lower grades. This means that there are relatively lower numbers of marks targeted at grades C and D in Foundation Tier and at grades A and A\* in Higher Tier. Particularly at Higher Tier, this in turn means that there is less to challenge the very best candidates. This was most noticeable in the limited content module examination, which of course has fewer marks, 72, in total. Here an appreciable number of candidates achieved 70 marks or more.

There remained a distinct difference between Foundation and Higher Tier candidates with regard to showing working. At Higher Tier working was usually shown although it was sometimes set out in a rather haphazard fashion. At Foundation Tier working was often omitted. This is particularly the case on section B, the calculator section. If no working is shown, no part marks can be awarded. Candidates should realise that, where more than one mark is allocated to a question, part marks will be awarded for correct work, even if the answer is wrong. This means that before a calculation is started on the calculator, that calculation should be written down. At both levels it is pleasing to note the reduced numbers gaining very low scores in single figures.

At both levels, verbal reasoning responses remain a problem. It is a requirement to test reasoning in the written papers, more so now coursework has been discontinued. In many cases there are standard responses which candidates can be trained to give. These include the standard reasons in the specification for geometrical facts and the standard comparisons of average and spread and methods of sampling in statistics. Of course there will always be a number of questions of this type which really test a depth of understanding and for which there is no standard response.

At both Foundation and Higher Tier, arithmetic remains a problem for candidates on the non-calculator sections. Even Higher Tier candidates are often hindered by their inability to carry out simple processes. Fractions particularly cause problems and many candidates simply do not answer fraction questions at all. Even on calculator sections, division seems unknown to many candidates and calculations are done by repeated addition/subtraction or trial and error with multiplication. It is pleasing to note the improvements in algebra.

Incorrect reading of questions is a problem at both tiers. Trigger words like 'estimate', 'single transformation' and 'factorise completely' are often ignored. It is accepted that estimate can mean different things in different questions. In a numerical question it requires a rounding before the calculation whereas in the calculation of a 'mean' it is necessary to call it an estimate because the middle of the interval is used. Clearly careful examination training is needed for this.

# B291 Foundation Paper 1

## General Comments

B291 is the modular paper for the Foundation Tier of MEI. Last year it ran parallel with its predecessor B261.

Section A is non-calculator.

Candidates appeared to have plenty of time on both sections.

Questions 8(c)(ii) and 15 were common with Paper 3.

## Comments on Individual Questions

### Section A

- 1 All candidates identified at least three shapes correctly. Rectangle and square were usually correct, and often kite as well. There were more problems with trapezium and parallelogram.
- 2 Parts (a) and (b) were generally well done. Most earned at least a method mark in part (c), a frequent mistake being the omission of the zero after 231 in the traditional long multiplication method.
- 3 Almost half of the candidates achieved full marks. Another third managed either part (a) or part (b), marks being evenly split between the two parts.
- 4 Many chose the right description in (a)(i), but fewer gave the correct reason in (ii), a number suggesting that they looked the same, or that the lines were parallel. In (b)(i) 75% measured accurately, though some measured AB. In part (ii) many used the wrong scale giving 67, or measured the wrong angle.
- 5 This question was well done, though some who had given the correct reason in part (c), proceeded to suggest outcomes beginning with a number greater than 4 in part (d).
- 6 This distance-time graph question was well done, with most avoiding the idea of going downhill from D to E.
- 7 A third of the candidates gave correct answers to part (a), though some just suggested 60 was a whole or an even number. A few made reference to a clock, because there are 60 minutes in an hour.  
Although some groups of candidates were obviously unfamiliar with pie charts, and others possibly didn't have protractors, there were many neat and accurate answers. Labelling was generally done well.
- 8 Part (a) was generally well done, though candidates often failed to simplify completely and left the answers as two terms. In part (b) many multiplied correctly, but failed to combine the positive and negative terms properly.  
In part (c)(i) many either multiplied out the brackets incorrectly, or just ignored them, or made arithmetical errors. In part (ii) there were more trials than algebraic methods.

**Section B**

- 9** All parts of this question were well done.
- 10** Part (a)(i) caused problems for some candidates, even where they proceeded to work out part (ii) correctly. In part (b) some forgot the four and calculated with just one battery.
- 11** Over 80% achieved full marks. More transposed the coordinates in part (b) than in part (a).
- 12** There was some confusion as to the meaning of each term in part (a) with many finding the mean for one of them. Almost all gained some marks in the question though. Part (b) tested their understanding of the mean and there were some pleasing comments. However, many thought that it couldn't be 12 because it wasn't in the list, some talked about dividing odd or even numbers and many did exactly what the question said not to do and calculated the mean!
- 13** Many found a suitable rectangle and correctly worked out the perimeter and area. A few repeated our examples, and a few, even with the examples, apparently had no concept of how to calculate either perimeter or area.
- 14** Parts (a) and (b) were generally well done, though some rounded part (a) and never showed the accurate answer. In part (c) many forgot the three years, attempted compound interest or divided by the 6.
- 15** Part (a) was well attempted using either division or multiples. Those who divided often made the mistake of rounding down to 5 for their answer. Although there were many correct answers to part (b) and some answers were only spoilt by incorrect rounding, it did cause more problems. Many forgot to multiply the cost by the number of coaches and just used the £350 for one coach to give £1.84.
- 16** Many candidates did not mention  $\pi$  in this question, and those who did often reversed area and circumference formulae. Few halved their answers for the semicircle, and even fewer added the diameter to give the complete perimeter in part (b). There were very few completely correct answers.

## B292 Foundation Paper 2

### General Comments

Although this was the first sitting for this paper, the two-tier format was in its second year of operation. Compared to last year's paper, B262, there was less evidence of candidates entered here being unsuited to this level of work. This was reflected in good spread of marks with virtually all candidates able to tackle some of the material, though hardly any of them showed total confidence with the whole paper. It was pleasing to see how well candidates handled the increase in application of mathematics. That said, verbal explanations frequently continue to be of a poor standard.

Candidates appeared to have sufficient time to complete each section of the paper, although there were candidates who only tackled the first few questions in each part.

Some candidates, once more, did not appear to have a calculator for section B although there did appear to be more candidates well equipped for the exam with most candidates able to access compasses where needed.

Candidates did not always write clearly when amending their original answers. Unclear crossing out, overwritten answers and extra dots that may or may not be decimal points were often in evidence. Centres should advise candidates to always cross out incorrect answers and rewrite clearly.

Questions 7, 8(a), 8(b)(ii and iii), 9 (c and d), 20 (a, b and c), 21 and 22 were common with Paper 4.

### Comments on Individual Questions

#### Section A

- 1 Almost all candidates were able to gain some marks on this question, usually gaining at least three out of the five marks available. The fractions caused the most problems with several weaker candidates thinking that  $\frac{1}{5}$  was equivalent to 0.5. Other errors included 0.01 instead of 0.1 and 1% instead of 10%.
- 2 In part (a), most candidates observed and commented upon the varying width of the bars. Fewer were aware of the impact of the frequency scale. Most candidates attempted part (b), but not all were able to express their ideas clearly. Some blamed the diagram rather than exploring the actual values involved. Part (c) was generally well answered, although the y-axis label was often neglected.
- 3 The conversions were correctly found on the majority of scripts with slightly fewer succeeding when faced with a decimal. Common errors in converting from mm to cm were dividing by 10 instead of multiplying, or multiplying by 100. Those candidates who could convert were usually also able to do the division.
- 4 Strong candidates picked up full marks, producing a neatly drawn diagram. Some candidates either erased construction lines or didn't use any. Even the weakest candidates could usually gain 2 marks; one for one side accurately drawn, and the other for the circle.

- 5 Parts (a) and (b) were generally well answered. Part (c) proved harder: many candidates could put at least one set of brackets in the right place but, even among those who managed 2 sets, very few could then calculate both correct answers.
- 6 Many candidates could multiply fractions correctly although not all of them simplified their answer. Subtraction of fractions was less well answered, although some candidates surprisingly could do this but not the multiplication. The most common incorrect answer to (b) was  $\frac{3}{5}$  found by separate subtraction of numerators and denominators.
- 7 In part (a) some candidates ignored the word 'estimate' and struggled with lengthy calculations; others could simplify the numerator, but tried a division by 31 or 32 because they hadn't rounded all numbers to 1 significant figure. Part (b) was done well by a good number of candidates; some, weaker ones, tried dividing by 3 instead of 4.
- 8 Disappointingly, only the strongest candidates could show the method of finding the interior angle in a pentagon; some others were at least able to make some progress using either exterior angles, or starting from the fact that the sum of interior angles was known to them. Part (b) of this question was poorly answered with even the fact that east is on a bearing of  $090^\circ$  being rarely known, many giving an answer of  $180^\circ$ . The rest of the bearings were beyond all but a handful of candidates.
- 9 Part (a) was well answered. Part (b) was not as well answered as in previous years with several candidates mentioning adding on but not being explicit about the 3. In part (c) strong candidates found the expression, some by using the formula for arithmetic progression. The most common erroneous answer was  $n + 3$ . Part (d) was mostly answered badly, but there were some explanations which were very clearly expressed.
- 10 Many candidates were unfamiliar with relative frequency; some simply copied the same numbers into the boxes, others tried tallying. Credit was given for any equivalent form of the answer, and fractions, decimals and percentages were seen. Only a very small number of candidates realised, in part (b), that 200 selections was a large enough sample to give a good estimate. Part (c) produced more good attempts with candidates who had not gained marks elsewhere in the question often reaching the answer intuitively.

### Section B

- 11 The reflection in part (a) was well handled by almost all candidates and parts (b) and (c) were also done well. Some candidates appeared to confuse congruence with similarity.
- 12 This question was well answered by most with part (a) being the part that candidates found easiest. Some candidates, by not labelling their arrows, made it impossible for examiners to tell which arrow referred to which outcome.
- 13 This question was generally well answered but some candidates misunderstood the way group tickets were priced. There was some carelessness over how many children or adults were visiting when it came to part (b).



- 14** This was a well answered question. A few candidates reversed  $x$  and  $y$  co-ordinates, and some placed point B between points A and M.
- 15** Parts (a) and (b) were generally well answered with very few using ratios or other incorrect notation. Part (c) caused more problems; most candidates could gain one of the marks for suggesting the placing of names in a hat or a box but then said to pick "randomly" without specifying how.
- 16** Most candidates could identify a kite and those that were able to show the second diagonal, were mostly able to decide on the correct statement about the diagonals. A few thought that the diagonals crossed at right angles and also bisected each other. Part (c) was mostly well answered but sometimes the answer given was 'triangles', 'rectangles', 'parallelograms' or 'cubes'.
- 17** Strong candidates generally gained full marks for this question; some weaker ones could pick up a follow-through mark for part (b).
- 18** In part (a) many candidates could not recognise that  $2M + 1$  would be odd; a few more realised that  $-N$  would be negative.  
In part (b), weaker candidates tried to measure the line, but overall the part was well attempted. A common error was to express  $x + x + x$  as  $x^3$ .
- 19** Most candidates were able to identify at least one prime, but quite a few included 9 as one of their answers.  
Part (b) was mostly well answered although some gave primes that did not show the theory to be false such as  $5 + 2 = 7$ .  
Part (c) produced some pleasing answers where candidates, not all of them strong in other topics, had clearly understood the logic behind the proof.
- 20** Part (a) produced very few correct answers.  
In part (b) there were more correct answers, but some candidates did much of the working without writing simplifications of the original equation. Seeing, for example,  $5x - 3x = 2x$  without saying what  $2x$  equates to, is insufficient to gain a method mark. Trial and error methods were also used but candidates should be reminded that, if these are unsuccessful, no marks are gained.  
The index rule question in part (c) was less well answered than previously.
- 21** Weak candidates were unable to gain any marks on this question, but for others the question produced a good spread of marks.  
In part (b), notation was often poor (but not penalised); formulae which included £ signs were not uncommon.  
In part (c), some candidates drew the graph  $y = x$ , and they were often unsure as to which axis they should read off for part (ii).
- 22** Despite this being a calculator paper few candidates appeared to calculate the VAT by multiplying by 1.175 or 0.175. Instead they frequently found 10%, 5% 1% and  $\frac{1}{2}\%$  (or  $2\frac{1}{2}\%$ ), often losing accuracy in the process. Many also tried to add VAT to Total Tiles.

## B293 Higher Paper 3

### General Comments

The mean mark was 43.9 and several candidates scored over 70 out of 72. Whilst this is encouraging, it is offset by the fact that quite a number scored 20 or less. This indicates that some candidates might be being entered inappropriately.

The rubric states that all working should be shown. This did not always occur; additionally some candidates find it difficult to set out their work carefully and logically and, given the space on the question paper, this can cause problems with examiners finding it difficult to discern the working and sometimes the answers being offered.

### Comments on Individual Questions

#### Section A

- 1 Measurement of distance and the conversion required were quite well done in part (a) but the measurement of the angle and the production of a bearing in part (b) was poorly done. Many candidates gave an answer that was less than  $180^{\circ}$ .
- 2 Part (a) was usually well done, though there were problems with the priority of operations with  $n = 50 + 7 \times 7$  calculated as  $57 \times 7$ . Part (b) was one of a number of questions where a description or an explanation was required and these were often not well presented. "It will be negative" could, for instance, refer to  $10 - r$  or to the value of  $n$  for large  $m$ .
- 3 This was usually correct, but there was plenty of evidence of incorrect manipulation, such as  $x - 1 = 28$ .
- 4 Many candidates commented on the fact that there were 18 vehicles in total passing the gates, which is, of course, incorrect. A number failed to appreciate that the assertion of probability in part (a)(ii) was valid because there was no reason to suppose that Friday was any different to the other weekdays on which the survey was taken. Despite this, in (b) they then usually picked up that Saturday was likely to be different and so the assertion was not valid.
- 5 Part (a) was usually done well, but the LCM in part (b) was not fully understood by many. The failure to obtain the LCM led to many ways to deal with part (c). Some turned all three fractions into decimals, not appreciating that such calculation is not usually required in the non-calculator section. The most frequent method not using the result of part (b) was to take each from  $\frac{1}{2}$  and then stating what was the smallest result.
- 6 Part (a) was the question that caused the greatest difficulty with marking due to candidates' inability to set out their work clearly. It was also evident that very few thought to check their answers by substitution. Part (b) was not well understood and a minority gave the clear answer "where the two lines intersect."
- 7 Most candidates failed to answer this question correctly. The usual error was trying to give some context to the two terms rather than looking at the dimensions.

- 8 While less than 50% identified all four graphs correctly, most got at least one of them correct.
- 9 Fewer than 30% gave the correct answer. Most misinterpreted the frequency density scale and gave the answer of 510

**Section B**

- 10 The context of this question demanded taking the next valid value above rather than rounding to the nearest whole number. So while most were able to round 5.2 coaches up to 6 in part (a), many failed to do likewise with the money of part (b)
- 11 There were a large variety of errors in part (a) including adding the frequencies and dividing by 5, thus ignoring the speed altogether!  
In part (b) a number wrote “because it is not accurate”, not appreciating that some reasons for this were required.  
A significant minority gave as their answer to part (c) that there were more vehicles and so the mean would be higher.
- 12 The majority got these algebraic questions correct and provided a good source of marks even for the weaker candidates. The only part not well done was part (a)(iii) where factorisation of a quadratic expression was not well done and even when it was done correctly the solution to the equation was often not given.
- 13 There were a wide range of responses to this question.  
In general the base area in part (a) was done correctly  
By no means all, could then multiply by the height to obtain a volume and even fewer then to convert to litres.  
In part (c) there were two responses, worked by approximately equal numbers of candidates.  
These were to calculate the height of water with the same volume as that of the box or to find the total volume of the box and water, then find the height of this new volume and finally the difference between that answer and 60. The former produced greater success.
- 14 This question was very poorly answered, even by the better candidates Few could visualise the “cut off top cone” needed to complete the solution and even those who did were unable to find the height of this part.

## B294 Higher Paper 4

### General Comments

The paper differentiated extremely well, with marks produced across the whole range and a number of candidates reaching scores in the high 90s. Thankfully, there were few candidates who scored very low marks as most candidates were able to pick up marks on the early questions in each section that were targeted at grades D and C. There remain a few candidates, however, for whom this paper cannot have been a rewarding experience and would have benefited from being entered at Foundation Tier.

There were clearly many candidates who previously would have been entered for the Intermediate Tier and had not been prepared for some of the more demanding topics like surds and vectors.

Candidates appeared to have had sufficient time for the paper.

Candidates did not cope well with questions which required written responses rather than calculations. Many of these are standard responses and training in these is clearly essential.

In section A, simple arithmetic let many candidates down.

Essential working was usually there though often scattered around in a fairly disorganised manner.

### Comments on Individual Questions

#### Section A

- 1 In part (a) most candidates made the expected approximations but arithmetic mistakes like  $200 \times 60 = 1200$  or  $12000 \div 30 = 40$  were fairly common. Part (b) was extremely well done.
- 2 In part (a) There were many good responses but many candidates just quoted the total angle as  $540^\circ$ , when the question asked for  $108^\circ$  to be shown. In part (b) many candidates did not appreciate which angles were required. Bearings seem to be not well done by even the better candidates. There was a surprising number of answers greater than  $180^\circ$ .
- 3 Part (a)(i) was very well done by almost all candidates with just a few giving answers such as 0, 3, 6 and 10. The answer 'Triangle numbers' in part (a)(ii) was given by many, but by no means all. Common wrong answers were 'Fibonacci' and 'Linear'. Part (b) was better done than in the past and with far fewer answers of  $n + 3$  than had been seen previously. Most candidates who got part (i) right also gave a satisfactory explanation in part (ii).

- 4 Part (a) was fairly well done. All that was required was to put the frequencies over a denominator of 200, although cancelling would have helped in later parts. Decimals were not required although there remains a school of thought that only a decimal is a valid numerical answer not a fraction.  
In part (b) more candidates than previously recognised that, for relative frequency to be used as probability, a large number of trials was necessary. Weaker candidates often made comments like 'because they add up to one'.  
Part (c) was very well done, sometimes after wrong answers in part (a).  
There were many correct responses to part (d) although a number of candidates made it more difficult by putting the fractions over a common denominator of 4000 which often led to numerical errors.
- 5 In part (a) better and middle ability candidates usually obtained the digits 5549 although answers of 55 490 000 or  $55.49 \times 10^6$  were sometimes left. Weaker candidates often reached the digits 1013.  
Better candidates did part (b) well but often the numbers were divided the wrong way or even multiplied. Others failed to round the numbers therefore making the division virtually impossible.
- 6 Although better candidates did part (a) quite well there were often methods from weaker candidates which displayed misconceptions or wrong assumptions. Common among these were that triangle ACD was isosceles/equilateral, angle BCD was  $90^\circ$  and various pairs of lines were parallel. The reasons were often spoilt by omitting crucial things like 'opposite', 'cyclic' and 'straight'.  
In part (b), as was to be expected, only the better candidates knew the Alternate Segment Theorem.
- 7 Part (a) was almost always correct although just a few gave wrong probabilities or added extra branches at the bottom.  
Part (b) too was quite well answered although weaker candidates often confused when to add and when to multiply probabilities. Here too arithmetic let some down with  $0.18 + 0.1 = 0.19$  and  $0.9 \times 0.2 = 1.8$  being all too common.
- 8 The vector question (admittedly somewhat easier) was better answered than previously.  
In part (a) most drew the right lines although some lost the mark through omitting the direction arrow. For vector  $\overrightarrow{EF}$  many just drew the component parts  $2\mathbf{a}$  and  $\mathbf{b}$  and failed to actually draw the vector  $\overrightarrow{EF}$ .  
In part (b), most better candidates made good attempts and many gave perfect solutions. The most common errors were to write  $\overrightarrow{AO} = \mathbf{a}$  instead of  $-\mathbf{a}$  and a similar mistake for  $\overrightarrow{CO}$ . Another common mistake was to write  $\frac{1}{2} - \mathbf{a}$  instead of the correct  $\frac{1}{2}(-\mathbf{a})$  or  $-\frac{1}{2}\mathbf{a}$ .
- 9 In part (a), even the best candidates often do not know the method of rationalising the denominator and also many did not simplify the answer even when they had rationalised.  
In part (b), in addition to the problems stated in (a), many interpreted  $ab^{-1}$  as  $(ab)^{-1}$ .

## Section B

- 10** The vast majority got part (a) right with just a few getting things like  $(a + 3)(a - 3)$ .  
Part (b) was done quite well, although there were a number of candidates who made sign errors in isolating the  $x$  and number terms.  
Part (c)(i) was also done well despite, of course, a number getting  $p^{15}$ .  
The harder part (ii), naturally was not done quite so well but better candidates did it successfully. Strangely as many errors were made with the numbers as with the powers with  $9x^2y^2$  being fairly common.
- 11** Part (a) was well done although some added £200 and some lost the mark through writing money incorrectly as £0.6.  
Part (b) was also well done although many put the units £ in. Strictly this was incorrect with the definition of  $y$  but was condoned.  
In part (c)(i) most got a straight line going through the origin but some used a wrong gradient.  
In part (ii) the value was usually read off correctly with the most common error being to read off the  $y$  value at the point of intersection.
- 12** Part (a) was well done although it is disappointing to see inefficient non-calculator methods on the calculator section. Finding 10%, 5% etc seems to be making it difficult and was the source of a number of numerical errors. Multiplying by 1.175 would seem so much easier and less liable to error. One of the most common errors was to add 17.5% on to the 'Total Tiles price'.  
Better candidates did part (b) well but many candidates simply reduced 27.73 by 17.5%. Higher Tier candidates should be looking for reversed percentage on the terminal paper.
- 13** Part (a) was well done, although a number of candidates reflected in the  $y$ -axis or in  $y = -1$ .  
Part (b) too was well done although some reversed the  $x$  and  $y$  movements.  
The last two parts were clearly designed for the better candidates and as such discriminated well.  
Part (c)(i) was better done than part (ii) and, whilst most better candidates could cope with the 'trig', many used the wrong angle, working out either the complementary angle or the angle between the two sloping lines ( $36.9^\circ$ ).  
In part (ii) many candidates recognised that Pythagoras was required but the usual errors were assuming the wrong value for sides eg 2 for the short side of triangle A or using decimals and therefore not being able to give the answer in surd form.
- 14** Part (a) was usually either correct or omitted. Some just tried lots of values until they hit on the ones which gave 303.25.  
Better candidates did part (b) well although there was some confusion over the two parts despite the second one being clearly described as the overall trend, which is one of the main purposes of plotting the moving averages.  
In part (c)(i) most candidates read off their line correctly although weaker candidates often did not attempt this.  
In part (ii), only the better candidates knew how to use their answer to part (i) correctly. One of the most common responses was to add the last three values to the value read off and divide by 4.

*Report on the Units taken in June 2009*

- 15** Part (a) was done quite well. The most common errors were sign errors on the  $x$  term or the values  $-12$  or  $\pm 7$  for the number term.  
Part (b) produced a very mixed response. Some candidates had clearly been trained well and produced perfect answers. Some of these had not fared all that well elsewhere on the paper. Many, however, could not get further than  $y(3x - 1) = 5x + 2$ . Most did not realise that it was necessary to isolate the terms involving  $x$  and there were a multitude of algebraic errors.
- 16** In part (a), although many were correct, many enlarged by a factor 2 or stretched in the  $x$  direction rather than stretching in the  $y$  direction.  
In part (b) many were correct again, but the common wrong answers were translating  $+ 2$  in the  $y$  direction or  $+ 2$  in the  $x$  direction.
- 17** This question was set for the best candidates and the best candidates did it very well indeed. Some good responses were spoilt by writing  $y = 3x - 2$  at the start. Some who had the right idea could not cope with the algebra and errors like  $(2 - 3x)^2 = 4 - 9x^2$  were common. Understandably many weaker candidates left this blank.

# Grade Thresholds

## General Certificate of Secondary Education Mathematics B (MEI) (Two Tier) (J519) June 2009 Examination Series

### Component Threshold Marks

Component	Max Mark	A*	A	B	C	D	E	F	G
B291	72	N/A	N/A	N/A	53	44	35	27	19
B292	100	N/A	N/A	N/A	65	54	43	33	23
B293	72	59	49	39	29	20	15	N/A	N/A
B294	100	74	60	46	33	23	18	N/A	N/A

### Specification Options

#### Foundation Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	279	N/A	N/A	N/A	240	200	160	120	80
Percentage in Grade		N/A	N/A	N/A	33.9	22.0	15.9	11.3	10.0
Cumulative Percentage in Grade		N/A	N/A	N/A	33.9	55.9	71.8	83.1	93.1

The total entry for the examination was 978

#### Higher Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	400	360	320	280	240	200	160	N/A	N/A
Percentage in Grade		25.0	21.6	25.3	21.2	4.9	0.8	N/A	N/A
Cumulative Percentage in Grade		25.0	46.5	71.8	93.0	97.9	98.7	N/A	N/A

The total entry for the examination was 936

#### Overall

	A*	A	B	C	D	E	F	G
Percentage in Grade	12.2	10.5	12.3	27.7	13.7	8.6	5.8	5.1
Cumulative Percentage in Grade	12.2	22.7	35.0	62.7	76.4	84.9	90.7	95.8

The total entry for the examination was 1914

Statistics are correct at the time of publication.



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