



Examiners' Report Principal Examiner Feedback

Summer 2025

Pearson Edexcel International GCSE
In Mathematics A (4WM2F) Paper 01R

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International GCSE Mathematics

4WM2F/01R

Principal Examiner's Report

This paper was suitable for the full range of ability of the candidates who sat it. Questions nearer the beginning of the paper were accessible to all and many candidates did very well, whereas the questions nearer the end of the paper were clearly found to be very challenging by many candidates, although there were some easier marks that weaker candidates could have picked up too.

There were numerous occasions where candidates clearly had not read questions carefully. There were cases of candidates misreading or miscopying information, highlighting the need for candidates to check and re-check both the question and their workings. There were also cases where a correct answer was found but was not given in the required form, again, candidates need to refer back to the question to check they have fulfilled its requirements.

While calculators are allowed throughout the examination there are many questions where calculators are expected not to be used and the full method should be shown. On the other hand, there were many opportunities for candidates to check their answers with their calculators, potentially saving marks by finding errors, but this was not often evident in candidate responses.

Comments on individual questions

Question 1

The first three parts of this question involved a given pictogram showing information about passengers' favourite activity during a train journey.

Part (a)

Almost all responses were correct for the number of passengers who said "sleeping".

Part (b)

A very large majority of responses answered correctly how many more passengers said working than watching films. Several incorrect responses contained workings where only one of the required values from the pictogram was correct, usually this was the value for "working" which was expressed with a whole number of symbols, unlike the value for "watching films" which used two and a half symbols.

Part (c)

Candidates were required to complete the pictogram for "playing games" given the number of passengers who gave that response. The required answer involved one and a quarter symbols and was done as successfully as the previous part. Responses scoring no marks were either blank or involved the incorrect number of symbols, often using too many.

Part (d)

It was given that 6 passengers played board games and 9 played computer games, and candidates were required to write down this information as a ratio in its simplest form. A high proportion were able to score marks for writing an acceptable ratio but a significant minority gave an incorrect response. Around half of responses were completely correct. Many incorrect responses offered fractions rather than ratios.

Question 2

In this question an unordered list of seven numbers from 2 to 10 was given. The mean average of the numbers was seen to be offered as an answer for any of the questions in many responses although the mean was not required.

Part (a)

This was the most successfully answered question part with a significant majority of candidates being able to write down the mode of the numbers.

Part (b)

Some errors or omissions in working out the median were seen when candidates attempted ordering the numbers, and 1 mark was allowed if there was only one error or omission. Some averaged two neighbouring values instead of picking the middle value. Many answers of 6 were seen, being the central number of the unordered list.

Part (c)

A slight majority were able to find the range. Some offered 2 – 10 without calculating the range.

Question 3

Part (a)

Candidates were shown a linear scale with an arrow pointing at a position on the scale and were asked to write down the number indicated by the arrow. A very high proportion gave the correct answer.

Part (b)

Another linear scale was given and candidates were asked to mark the number 4.6 with an arrow. Again, there were very few incorrect attempts, with a few attempts of 4.5 seen.

Question 4

A circle was shown with a chord AB and the minor segment shaded.

Part (a)(i)

Candidates were asked to write down the mathematical name for AB . A very small proportion were able to answer correctly.

Part (a)(ii)

Candidates were asked to write down the mathematical name for the shaded region. A slightly smaller proportion were able to answer correctly compared to the previous part.

Part (b)

Candidates were shown a rectangle and were asked to draw on it the lines of symmetry. Many blank responses were seen, and either one or two diagonals drawn or only one of the two correct lines of symmetry drawn. Some made other marks on the figure such as arrows for parallel lines. A moderate minority answered correctly.

Part (c)

Candidates were shown a parallelogram and had to write down its order of rotational symmetry. A moderate minority were able to answer correctly, with many answering "4" incorrectly.

The low scores seen throughout this question highlight the importance of memorising and understanding key mathematical terms.

Question 5

Candidates were shown the first five terms of an arithmetic sequence.

Part (a)

Almost all candidates were able to write down the next term of the sequence.

Part (b)

Almost all candidates were able to offer an acceptable explanation for their answer in part (a), most often stating, in various ways, that the rule for the sequence was "add 4".

Part (c)

There was a little less success in finding the 10th term of the sequence often owing to arithmetical errors in counting forward in fours.

Part (d)

Candidates had to explain why 50 could not be a term of the sequence. Many correct answers were seen although some did not go further than stating that 50 was not in the sequence, alongside the rule for the sequence. Many were able to explain that $49 + 4$ excluded the possibility of 50 being in the sequence. Direct verification like this proved to be a very successful approach.

Question 6**Part (a)**

A majority were able to draw a congruent triangle although some were let down by the accuracy of their drawing. Surprisingly many drew either a similar triangle or an incorrectly proportioned triangle.

Part (b)

Candidates were required to measure the angle shown in the diagram, which had a true value of around 31° . Just under half of attempts were incorrect. There was a surprising number of blank responses and some presumed guesses of 90° or 180° . Many incorrect answers were around 150° suggesting the wrong scale on their protractor had been used. Another common incorrect answer was 60° , which is difficult to explain other than as an attempt to convert 150° into an acute equivalent. Clearly protractor use could have been better prepared by many candidates, some of which seemingly did not have a protractor or did not use one.

Part (c)

In this question candidates needed to draw a line of length 65 millimetres starting at a cross given in the answer space. Again, there was a surprising number of blank responses. Many lines were either much too short or much too long. Some did not start their line at the given point and some seemed not to use a ruler. Correct answers were given just over half the time.

The responses in this question highlight the need for accuracy in drawn answers.

Question 7

Part (a)

Candidates had to simplify $5d \times e$ and this was generally done correctly. Incorrect answers mostly maintained the multiplication symbol, used division instead of multiplication, or attempted evaluation. Some responses were blank.

Part (b)

Candidates had to simplify $6 \times m \times 3 \times k$ and this was done with a little less success than the previous part. Many only went as far as partial simplification, e.g. $6m \times 3k$. The numerical terms should have been combined and no multiplication symbol used.

Part (c)

The first five terms of an arithmetic sequence were given and candidates had to find an expression in terms of n for the n th term of the sequence. Only a small proportion of answers were correct. There were some blank responses and many gave a numerical answer, usually the first term, or the sum of the first and fifth terms. When algebra was attempted a common incorrect answer was $n + 10$ rather than the correct $10n$.

Question 8

Candidates were shown a parcel and a box, both were cuboids of given dimensions, and it was required to work out the number parcels needed to completely fill the box. Most were able to find the numbers of parcels along each edge of the box, or the volume of either the box or the parcel, but many examples were seen where these values were incorrectly added or subtracted instead of multiplied or divided. Many candidates made use of the diagram to support their choice of methods by drawing parcels within the box in various ways.

Question 9

This question was about booking a hotel room for 7 nights, given the cost of the room for 2 nights and an additional tax for each night. Most were able to find the total cost of the tax for 7 nights or the cost of the room for 1 night. Combining values to find the total cost for 7 nights infrequently led to errors and a significant majority gained full marks. A common error was possibly from misreading the question as the cost of a room being £150 for 1 night rather than 2 nights.

Question 10

Part (a)

Candidates needed to work out the real distance in kilometres between two towns from a scale drawing shown in the question. A large minority gave fully correct answers although converting from metres to kilometres was sometimes a problem. Measuring the distance outside of the acceptable range lost credit in some responses although correct method for converting a value to kilometres was still possible for the first mark.

Part (b)

Candidates were required to work out the time to cycle directly between the two towns given the times a cyclist was at each town (12 50 and 17 15). Many candidates were unable to give a fully correct answer. Incorrect answers mostly gave 5 hours with various answers for the minutes, indicating that most could find the difference in the hours but many could not understand the effect on the number of hours of the difference in the minutes.

Question 11

The question showed a bar chart about the results of games played by a team and the points for winning, drawing and losing. The vertical scale showing the number of games was not given but candidates were told 14 games were drawn. Many candidates did not use the scale on the bar chart and incorrectly used one game per division. Some did not realise that games lost accrued no points. A small majority did work with the scale and went on to score full marks.

Question 12

This question involved a given recipe for making six biscuits from various quantities of listed ingredients.

Part (a)

Candidates had to answer with how many biscuits could be made using a certain amount of one ingredient. This part was well answered by the majority of candidates with incorrect answers gaining credit for a first step to find the number of batches of six biscuits that could be made with the given amount of a certain ingredient.

Part (b)

It was given that somebody made 84 of the biscuits and candidates were required to answer with the weight of butter used. Candidates answered this part as successfully as the previous part.

Part (c)

In this question it was given that a certain amount of money was paid for ingredients by two people in a given ratio. Many who did not gain full marks had either failed to recognise the need to divide by the total number of parts or had done that but did not chose the correct share required for the question, some working out both shares correctly and picking the incorrect one. Around half of responses scored no marks and a small proportion scored 1 mark for finding one part of the ratio.

Question 13

Part (a)

Candidates had to work out the value of y in $y = 5d - 8e$ given values for d and e . Many candidates were able to substitute the values but some were let down by poor arithmetic. Some misunderstood the algebra involved and presumed the letters were unit digits in two-digit numbers. A small majority scored full marks.

Part (b)

It was required to make r the subject in $c = 8r + h$. The majority of candidates did not get any marks owing to poor algebraic manipulation, although a correct first step was seen in a large minority of responses.

Part (c)

It was required to write a formula for the total seeds (T) in n bags and p boxes of seeds, given 12 seeds in each bag and 25 seeds in each box. There were many correct responses although a significant number were incorrect or blank. Many incorrect responses had $T = n + p$, the total number of bags and boxes, although there was a mark available for this type of response.

Question 14

Candidates were told about two different coloured lights blinking with different periods and were required to find the time they would next blink together given they blinked together at a certain time. Many candidates did not recognise the

need to calculate the LCM of the periods, and some incorrectly added or subtracted the periods. Those listing times for each light often had errors in their lists. Only a small proportion gained full marks.

Question 15

Part (a)

Candidates had to find 35% of 500. There were many correct answers but a common error was finding 35 as a percentage of 500, $35 \div 500 \times 100$, instead of $35 \div 100 \times 500$.

Part (b)

Candidates had to work out the bonus for selling a car at \$65 000 when the bonus was 6% on the first \$40 000 plus 8% for the remaining amount above this value. A significant minority gave correct answers but some became confused about what to do after finding the bonus on \$40 000, and often tried to combine it with other figures. Some stated the percentages to find but did not show correct method.

Question 16

Part (a)

Most candidates were not able to write down the modal class from the given grouped frequency table. Many candidates selected the frequency for the correct modal class or gave the midpoint of the correct modal class, and these responses were not acceptable. Some candidates attempted calculations while others simply selected an incorrect class or left the answer line empty.

Part (b)

In working out an estimate for the mean from the grouped frequency table a small proportion of candidates found the correct answer. Most of the rest gained no credit, usually this was because they did not attempt acceptable products of values within the intervals with the corresponding frequencies, including a surprising number of cases where the frequencies were multiplied by the class widths. Of those who selected the correct method some made arithmetical errors in the products, or the sum of their products, but were able to gain credit when showing their method. Some candidates incorrectly divided their sum of products by the number of groups in the table rather than by the sum of the frequencies.

Question 17

A significant minority of candidates were able to write 1400 as a product of its prime factors while showing their working clearly. These candidates showed their method in a variety of ways including factor trees, tables, and lists. Some candidates lost the final mark for not expressing their answer as a product of prime factors, indicating the importance of referring back to a question in order to check its requirements have been satisfied before moving on. There was some credit available for those candidates without a correct answer but who had

shown sufficient stages in prime factorisation. There were many blank responses and responses not progressing past a first step of factorisation.

Question 18

A small proportion of candidates were able to show clear algebraic working in solving the given pair of simultaneous equations. The most common approach was to subtract the equations to gain the direct elimination of x terms, although many other examples were seen where one or both of the equations were scaled prior to addition or subtraction. Arithmetic errors occurring in any of the stages were common but some credit was nonetheless available for correct method in these cases. Many responses contained multiple attempts with confusing workings that were at times difficult to follow, indicating the importance of setting out methods clearly. Poor skills in algebraic manipulation were also evident as some candidates attempted to change individual terms in equations independently of others.

Question 19

Part (a)

Only around half as many candidates managed to correctly rotate the given triangle 90° anticlockwise about the point $(1, 2)$ as those who drew a correct triangle with the correct orientation but in the wrong position. A small majority gained no marks, these candidates mostly drew a correct triangle with incorrect orientation.

Part (b)

Candidates were required to describe fully the single transformation mapping one given triangle onto another. A small proportion of candidates were able to score 1 mark for stating either "translation" or the correct vector, but no candidate managed to score full marks for stating both. Many incorrect responses were seen where the vector was described in words, e.g. moves 9 left, 3 up. Candidates need to understand that when a translation like this one is to be described in a single transformation then this means a vector will be required. Some vectors that were given as answers were unfortunately incorrect or stated in the form of coordinates.

Question 20

This question concerned finding the percentage profit for tiling a floor given the area of the floor, the coverage and cost of a box of tiles, the cost of adhesive, and the charge to the customer. A majority of candidates were able to determine the total cost or the profit. Many of these candidates incorrectly attempted to calculate the percentage profit by dividing by the charge rather than the cost. A small but significant proportion either did not score or gained partial credit for showing correct method to work out the cost or the number of boxes of tiles needed, or the cost of the adhesive.

Question 21

Part (a)

This question required 82000000 to be written in standard form, which was done successfully by a moderately small proportion of candidates. The majority gave incorrect answers which were often numerically correct but not in standard form or with an incorrect index.

Part (b)

This question required a number in standard form to be written as an ordinary number, which should have been 0.0000058, and was answered much less successfully than part (a). The incorrect responses often had an incorrect number of zeroes between the decimal point and the digit 5. Some responses had a string of zeroes followed by "58" but no discernable decimal point, or the decimal point in the wrong position, while some others attempted to write the number as a fraction.

Part (c)

This question required a very large number in unnormalised index form to be written in standard form. The question was answered correctly by a small proportion of candidates and much less successfully than the previous parts. Many responses were not numbers in index form at all. When index form numbers were given, many errors were seen in the index, typically ranging from 298 to 301, whereas the correct answer had an index of 302. Some candidates seemed confused that they could not use their calculators to answer this question directly and it is important to note that non-calculator questions can be expected on this topic.

Question 22

Candidates were required to work out the mean of 4 numbers given the means of 7 and 3 numbers with the 4 numbers respectively included and excluded. A large majority of candidates showed that they did not really know how to proceed in this question. A small proportion gained a mark for finding the totals of one of either of the 7 or the 3 numbers. A very small proportion of all candidates made further progress, but those that did generally gained full marks.

Question 23

In this question candidates needed to find the original price of a dishwasher given its sale price and the percentage reduction (15%). The majority of candidates gained no marks by incorrectly attempting to increase the sale price by 15%, or by other incorrect methods involving 15%. A small proportion of candidates made progress after realising correctly that the sale price was 85% of the original price, although many did not use 0.85 correctly; those that did generally gained full marks.

Question 24

Part (a)

This question required candidates to solve a linear inequality with the unknown on both sides, showing clear algebraic working. A large proportion of candidates made no progress owing to poor algebraic working although some succeeded in correctly collecting constants and terms in x on opposite sides of their inequality for 1 mark. A very small proportion of candidates found the correct answer and some lost the final mark for presenting their answer with an incorrect inequality symbol, which was condoned only for the method marks.

Part (b)

Candidates were shown a shaded region bounded by three straight lines on a coordinate grid and they needed to write down three inequalities that defined the region. Very few of the responses were fully correct with a significant majority gaining no marks. Some gained partial credit for presenting one or two correct inequalities, and others were helped in part by special cases on the mark scheme for all inequalities being reversed or all answers being presented as equations rather than as inequalities. For all marks, the inequalities were allowed whether expressed strictly or not.

Question 25

This question involved a regular decagon sharing a side with an irregular hexagon with one unknown interior angle; candidates had to find a labelled angle between the shapes at a common vertex. A small number of responses were fully correct and a large majority gained no marks. The most common partial credit awarded was two marks for getting as far as finding one of the unknown interior angles. There were many instances seen of incorrect method to find the interior angle of a regular polygon and some cases where the sum of interior angles of a hexagon or decagon was recalled incorrectly, which prevented further credit being awarded. This highlights the need to be able to recall key formulas and facts accurately.

