Examiners' Report
Principal Examiner Feedback

Summer 2025

Pearson Edexcel GCSE (9 – 1)
In Mathematics (1MA1)
Higher (Non-Calculator) Paper 1H

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GCSE Mathematics 1MA1
Principal Examiner Feedback – Higher Paper 1

General comments

This paper provided a good range of questions that gave candidates the opportunity to demonstrate their knowledge, skills and understanding. Most scripts seen showed attempts to answer all questions, with relatively few pages containing no working at all. Demonstrating a willingness to have a go, even on the most challenging questions. The overall quality of work was encouraging with many candidates demonstrating clear and methodical working that often led to correct answers. Some excellent responses with a high standard of mathematical reasoning were seen throughout the paper.

The early questions were generally answered well and many candidates were successful in gaining most of the marks for the first five questions. Higher attaining candidates were well-prepared for topics later in the paper such as gradient of a tangent in Q12(a), recurring decimals in Q13, histograms in Q15 and surds in Q16 and many were able to gain marks for working with composite functions in Q17. A notable proportion of candidates were unsure of how to prove that two triangles are similar in Q8(a). Many did not recognise the need to use algebra to prove the statement in Q10 and, when algebra was used, marks were often lost due to algebraic errors or missing brackets.

The overall standard of arithmetic was good with many candidates working out calculations efficiently and accurately. Nevertheless, candidates should be encouraged to check their calculations. Whilst arithmetic errors may be condoned in the awarding of method or process marks, accuracy marks would not be awarded. Division calculations, such as $180 \div 40$ in Q4(a), $30 \div 20$ and $18 \div 1.5$ in Q8(b) and $120 \div 48$ in Q11 appeared to be particularly challenging for some candidates.

Working was generally presented in a clear and logical manner and there were many well-structured responses to the most challenging questions. When they were unable to score full marks, candidates often gained marks for correct methods and processes. Candidates should be reminded of the need for accuracy when drawing and interpreting diagrams, particularly when plotting and joining points on a graph and when reading scales on graphs.

There were instances where full credit could not be awarded as responses had not met the specific demands of the question. Candidates should pay particular attention to the final line of a question and follow any instructions given. Both Q4(a) and Q6 included the instruction "You must show all your working" and both Q13 and Q16(a) asked for the answer to be given in its simplest form.

Comments on individual questions

Question 1

This familiar type of question was answered well and many responses gained both marks for finding that the highest common factor of 54 and 120 is 6. The most popular approach was to draw factor trees to find the prime factors of 54 and 120 and most factor trees were accurate. Sometimes the prime factors were not used in the correct way and only one mark could be awarded. The method mark could be awarded for a complete factor tree for 54 or 120 with no more than one arithmetic error or for finding the prime factors of 54 or 120. Good use was made of Venn diagrams. Those responses that listed factors or factor pairs of 54 and 120 were less likely to score full marks because they often did not find all the factors or factor pairs. Nevertheless, many of these responses gained one mark for finding at least 4 factors of 54 or 120 or for an answer of 2 or 3 or 2×3. Some responses found multiples of 54 and 120 rather than factors and gained no marks.

Question 2

Part (a) was answered very well. Most responses showed an understanding that the probabilities in the table should add to one and gained the first method mark for finding that the probability of taking a blue or green counter is $1 – (0.3 + 0.1)$. They could then usually use the information that there are twice as many blue counters as green counters to work out the separate probabilities as 0.4 and 0.2. Some responses divided 0.6 by 2 instead of dividing it by 3 and did not gain the second method mark. Most responses that found the probability of 0.4 went on to score full marks but some did not gain the accuracy mark because they attributed 0.4 to P(green) or because they gave their answer as a fraction with a decimal numerator i.e. $\frac{0.4}{1}$.

Part (b) was also answered well and many responses scored both marks for finding that the total number of counters in the bag is 150. Relatively few responses did so by working out $45 \div 0.3$. Many divided 45 by 3 to find that a probability of 0.1 represents 15 counters and then multiplied 15 by 10. Some responses took a longer route and worked out the number of counters of each colour and then added them. Those who showed a fully correct method but made a numerical error scored one mark.

Question 3

This question was well answered by the majority of responses. The table in part (a) was often completed correctly. Some errors occurred with the substitution of $x = –2$ into the equation and the substitution of $x = 1$ sometimes resulted in $y = –3$.

When the 6 correct points were plotted in part (b) most responses realised that a curve was needed to join the points and it freehand curves drawn with an appropriate turning point. Many fully correct graphs were drawn. A significant number of responses drew an otherwise correct graph with a ‘flat bottom’ between (–1, –4) and (0, –4) and this meant that only one of the two marks was awarded. Graphs consisting solely of line segments could get at most one mark. Some responses plotted the six correct points but did not join the points to complete the graph. If a mark had been awarded in part (a) for finding two or three correct values, then at least one mark was usually earned in part (b) for plotting 5 of the points from their table correctly. Candidates should be reminded that curves must pass through all of the points and that quadratic graphs have a single turning point.

Responses that had drawn a graph with a single turning point were often able to gain the mark in part (c) for writing down the coordinates of the turning point. Some errors were made when reading the y coordinate from the graph and sometimes the x coordinate was given as 0.5 instead of –0.5. Some responses recognised that the turning point is at $x = –0.5$ and substituted into the equation to find that the y coordinate –4.25 and gained the mark. The coordinates of the turning point were often given as (–0.5, –4) even when the minimum point on the curve was clearly below $y = -4$. Many responses used the points of intersection of the graph with the axes, leading to answers such as (0, –4) and (–2.6, 1.6).

Question 4

Most responses made very good attempts at the multi-step problem in part (a) with many achieving at least three of the five marks. Solutions were often well presented with working out that was easy to follow. The most popular approach was to start with a process to find the number of dark chocolates, for example 280 ÷ 7 or $\frac{1}{7} \times 280$, which gained the first mark and then subtract the result from 280 to find the number of chocolates that are milk or white. Dividing this number in the ratio 1 : 3 gave the number of milk chocolates and the number of white chocolates. These numbers were often seen in a ratio, e.g. 40 : 60 : 180. In order to complete the solution candidates had to identify the two values needed to find the value of n. Some simplified the ratio 180 : 40 and some divided 180 by 40. Arithmetic errors when working out 180 ÷ 40 meant that the accuracy mark was sometimes lost. Some responses reached the ratio 180 : 40 and were unsure of how to progress from this point. After gaining the first three marks for finding the number of each type of chocolate some responses did not make the final step to find the value of n. Some weaker responses gained only the first mark because 40 was used in an incorrect way or not used at all. A common mistake was using 40 and the ratio 1 : 3 and stating that milk chocolates = 1 × 40 and white chocolates = 3 × 40. Another mistake was sharing 280 in the ratio 1 : 3 in an attempt to find the number of milk chocolates and the number of white chocolates. Some different ways of approaching the problem were seen. Some responses combined the ratios 1 : 3 and $n : 1$ to get $n : 3n : 3$ but $n + 3n + 3$ was rarely used in a correct equation. Some used the ratio $\frac{40n}{3} : 40n : 40$ and formed the equation $\frac{40n}{3} + 40n + 40 = 280$.

In part (b) many of the responses that correctly stated that eating 10 milk chocolates from the box would not affect the answer to part (a) gave a correct reason that referred to or implied both dark and white chocolates. Some gave a reason that only referred to white chocolates and could not be awarded the mark. Many responses, though, made an incorrect decision and stated that the answer to part (a) would be affected, often because there are now fewer chocolates overall.

Question 5

Many responses were able to score full marks for adding 5.7×10^2 and 9.8×10^3 and obtaining an answer of 1.037×10^4. This was usually done by first writing both numbers as ordinary numbers, which was usually done very well, although some responses started by writing 5.7×10^2 as 0.57×10^3 or 9.8×10^3 as 98×10^2. Some responses scored the first two marks for 10370 but did not write it correctly in standard form (1.037×10^{-4} was a common incorrect answer) or made no attempt to write it in standard form. Arithmetic errors in the addition meant that some responses gained only the first mark. There were also some responses that missed the addition symbol in the question and tried to multiply the two numbers – these responses often gained the first mark for a correct conversion into an ordinary number. Some responses did not convert into ordinary numbers correctly, writing 5700 and 98000 instead of 570 and 9800 for example, and gained no marks. A very common incorrect approach was adding 5.7 to 9.8 and combining the powers of 10 to get 15.5×10^5 and then giving a final answer of 1.55×10^6.

Question 6

Many responses were able to make a good start by finding the interior angle of the regular polygon. This was often marked on the diagram. The next step for many was to work with the sum of the interior angles. Some responses used $(n - 2) \times 180°$ to form an equation, which gained the second mark, and those who did often went on to solve the equation and find the value of n. Those who didn't form an equation often used $(n - 2) \times 180°$ to trial different angle sums and were often successful in finding $n = 12$. This question instructs candidates to show all their working so, to score full marks, an answer of $n = 12$ had to be supported by the award of the first two marks or by $1800 \div 150 = 12$ or equivalent. Some responses with the correct final answer of 12 obtained only one mark or no marks because they did not contain sufficient supportive working. Those responses that worked with the exterior angle had a much quicker route to the solution, $180 - 150 = 30$ and $360 \div 30 = 12$. In many weaker responses, angles of 60 and 90 were often marked on the diagram but not added to give the interior angle of the polygon and these responses gained no marks.

Question 7

Many responses were able to gain the mark in part (a) for simplifying the expression and getting an answer of $6 - 3m$ or $3(2 - m)$. In some responses $6 - 3m$ was incorrectly simplified to $2 - m$ and the mark could not be awarded. In many weaker responses the first step was to expand the brackets in the numerator. This approach did not lead to a simplified expression.

Replacing the inequality by an equality was not penalised for the method marks in part (b) but candidates had to remember to use the correct inequality symbol for the final answer. Final answers of 10 or $x = 10$ were not awarded the accuracy mark. Some responses used the incorrect inequality sign, sometimes as a result of multiplying both sides by -1 and forgetting to reverse the inequality sign. The first method mark was awarded for a correct first step. Adding 8 to or subtracting 7 from both sides was usually a successful first step but multiplying both sides by 2 was often carried out incorrectly because not all terms were multiplied 2. The second method mark was awarded for a correct second step. For method marks to be awarded the steps had to be carried out, it was not sufficient to just show an intention. If no intention was shown then the resulting inequality (or equation) had to be fully correct. When the intended step was shown, the method mark could be awarded when all the elements of the inequality that should be acted upon by that step had changed (allowing for an arithmetic error) and the other aspects of the inequality had not. Errors when subtracting x from $\frac{5x}{2}$ were very common and often resulted in $\frac{4x}{2}$. If the intention to subtract x from both sides had been shown then the method mark could be awarded.

Many responses answered part (c) well. The method mark was awarded for a correct first step. Most often this was subtracting 4 from each part of the inequality $9 < 2y + 4 < 12$ to get $5 < 2y < 8$ although some responses chose to divide each part by 2 to get $4.5 < y + 2 < 6$. Following a correct first step, most then went on to give a correct inequality as the final answer. The accuracy mark could not be awarded when $2.5 < y < 4$ was seen in the working but something different, for example $y = 3$, was given as the final answer. In weaker responses that gained no marks the first step was often carried out incorrectly because the operation was not applied to all parts of the inequality. Attempts to subtract 4 often resulted in $5 < 2y < 12$ or $9 < 2y < 8$ and dividing by 2 sometimes gave $4.5 < y + 4 < 6$. In some responses part of the inequality disappeared altogether with $9 < 2y + 4 < 12$ being followed by $2y + 4 < 3$. Some responses chose to work with two separate inequalities, $9 < 2y + 4$ and $2y + 4 < 12$, and sometimes did so successfully.

Question 8

In part (a), a proof that triangle *ABC* is similar to triangle *ADE* was required and this appeared to be particularly challenging with many responses unsure of what was required. Those responses that showed some understanding of what they needed to do often gained the first mark for identifying angle *A* as common or for stating that angle *AED* = angle *ACB* or angle *ADE* = angle *ABC* and giving an appropriate reason. This mark could not be awarded when reasons were incomplete or poorly expressed. Reasons given to explain why angle *ADE* = angle *ABC*, for example, often referred only to parallel lines and did not mention corresponding angles. Equal pairs of angles were often identified with no reasons given and so no marks could be awarded. To complete the proof, it was necessary to identify a second pair of equal angles with an appropriate reason and give a statement that the angles in each triangle are the same. Many responses tried to prove that the two triangles are similar by using the conditions for congruency and it was common to see working that ended with SAS or ASA or RHS. These responses could gain at most one mark. Many responses contained only numerical work, often involving the scale factor, and these gained no marks.

In part (b), many responses were able to score all three marks for working out the length of *EC* as 6 cm. Finding the scale factor earned the first mark and a process to find the length of *AE*, such as $18 \div 1.5$, earned the second mark. Some responses did not gain the final mark because 12 was given as the final answer. Giving the scale factor in ratio form earned the first mark but a common mistake was to then divide 18 in the ratio 2 : 3 which resulted in answers of 7.2 or 10.8. A common incorrect approach that gained no marks was $30 - 20 = 10$ followed by $18 - 10 = 8$. There were many incorrect attempts that involved Pythagoras' rule or areas of triangles and trapeziums.

Question 9

In part (a), a correct description of the single transformation that maps shape **A** onto shape **B** gained two marks. The description needed to include three aspects: (1) rotation or rotate; (2) an angle of 90° (since positive angle measures represent an anticlockwise rotation) or 90° anticlockwise or 270° clockwise; and (3) the correct centre of rotation (–1, 0). A description with two of the three aspects was awarded one mark. Many responses that did not achieve full marks described the rotation as 90° clockwise, which maps shape **B** onto shape **A** and not shape **A** onto shape **B**. The centre of rotation, (–1, 0), was often missing or incorrect. It was sometimes given in the reverse order (0, –1). Omission of the brackets from the coordinates was condoned but use of vector notation was not condoned. Descriptions using more than one transformation, for example a rotation and a translation, were awarded no marks as the question asked for a single transformation.

In part (b), many responses were able to score two marks for drawing a correct enlargement of the triangle. Those who drew lines from the vertices of the triangle to the centre of enlargement were often successful. One mark was awarded for a triangle with two out of three vertices correctly placed or, more commonly, for a triangle of the correct size and orientation in an incorrect position. Some triangles were drawn with one vertex touching the centre of enlargement. Triangles of the correct size that were drawn in an incorrect orientation gained no marks and sometimes these were the result of using a negative scale factor. Some of the triangles drawn were larger than the original triangle.

Question 10

Responses that realised that an algebraic proof was needed usually gained the first method mark for writing expressions for two consecutive even numbers, for example $2n$ and $2n + 2$. Many then went on to gain the second method mark for correctly expanding the squares of both expressions. Some minor errors were made when expanding brackets and occasionally squaring $2n$ resulted in $2n^2$ rather than as $4n^2$. Expanding $(2n + 2)^2$ to get $4n^2 + 4n + 4$ was a common error. The final mark was awarded for a complete proof without any errors and a justification that the final expression is a multiple of 4. The justification was usually achieved by factorising with a 4 outside the bracket. Those who did not factorise needed to explain that since both parts are multiples of 4 the expression is always a multiple of 4. The final mark could not be awarded if the proof contained algebraic errors. Errors made when subtracting expressions were often due to a lack of necessary brackets. Subtracting $(2n + 2)^2$ from $(2n)^2$ was an acceptable approach but it was common to see the subtraction written incorrectly as $4n^2 - 4n^2 + 8n + 4 = 8n + 4$. Responses that used expressions for two integers with a difference of 2, such as n and $n + 2$, as their starting point could gain at most two of the three marks unless they included a statement that n is even. Many weaker responses used numerical values and these gained no marks because algebra is required for this type of proof question.

Question 11

Many responses set up an equation with a constant term and they often wrote down both $T = \frac{k}{w}$ and $w = k\sqrt[3]{d}$. Terminology was sometimes an issue with responses using d^3 or $\sqrt{d}$ instead of $\sqrt[3]{d}$ or incorrectly interpreting inverse proportion as direct proportion and writing $T = kw$. Most then went on to gain the second mark for substituting the given values in at least one equation and the values found for the constants were usually correct. Having found the values of the constants there were two routes available. Some responses combined $T = \frac{120}{w}$ and $w = \frac{1}{2}\sqrt[3]{d}$ to find a formula for T in terms of d and this gained the third mark. Substituting $T = 48$ in the formula earned the fourth mark and gave them an equation to solve to find the value of d. Having found the values of the constants some responses earned the third mark for a correct process to find the value of w when $T = 48$ and the fourth mark was then awarded for substituting the found value of w in the equation $w = \frac{1}{2}\sqrt[3]{d}$. Some responses got as far as $48 = \frac{120}{w}$ but did not rearrange the equation to find or isolate w. Whichever of the two approaches was used, errors were often made when solving the final equation. It was not uncommon for 2.5 to be multiplied by 0.5 instead of being divided by 0.5 or for responses to cube root the answer rather than cube it to find the value of w.

Question 12

The tangents drawn in part (a)(i) were generally accurate and responses often went on to gain all three marks for working out an estimate of the gradient at $t = 3$. If a tangent was not drawn then no marks were awarded. When answers were given in the form a/b the final mark was not awarded unless a and b were integers. Errors were often the result of reading the scales incorrectly although some responses divided the change in x by the change in y. Some responses drew a tangent, thus gaining the first method mark, but did not then show a method to find the gradient. Many responses used the coordinates of the point on the curve at $t = 3$ and divided 42 by 3. Some of these responses had already drawn a tangent to the curve at $t = 3$.

In part (a)(ii), many responses showed that they knew the gradient represents the acceleration of the particle. Incorrect answers often referred to velocity or time or the distance travelled. Some answers referred to correlation.

In part (b), many responses demonstrated how to estimate the area under the curve using three strips of equal width. Often, they used one triangle and two trapeziums and usually made good use of the formula for the area of a trapezium although some incorrect substitution into the formula was seen. Some split each trapezium into a rectangle and a triangle which was perfectly acceptable. A method to find an appropriate area was needed to gain the first method mark and this could be implied by a single correct area for one strip. A complete method was needed for the second method mark. In some of the incomplete methods seen the responses had omitted one of the five areas when using a rectangle and triangle approach. When responses gained just one mark it was often for finding the area of the triangle in the first strip. Candidates should always show the method they use to work out each area as method marks can still be awarded for incorrect areas if examiners can see that the incorrect areas come from a correct method.

Question 13

Converting a recurring decimal to a fraction is a familiar type of question but here candidates had two recurring decimals to deal with. However, this was a well answered question with many responses gaining 4 or 5 marks. Many responses gained the first method mark for the start of a method to convert $0.\dot{2}$ to a fraction. Some knew that $0.\dot{2} = \frac{2}{9}$ without needing to show a method. A method to convert $0.6\dot{8}\dot{1}$ to a fraction was needed for the second method mark and many responses found two recurring decimals that lead to a terminating decimal difference using correct multiples of y. After finding two appropriate decimals to subtract some responses were spoilt by careless arithmetic errors such as $1000y - 10y = 900y$. Some responses could recall the need to multiply the recurring decimal by powers of ten but were either unable to find the multiples needed to eliminate the recurring nature of the decimal or could not carry out the multiplications correctly. Some did not interpret the recurring notation correctly and $y = 0.6\dot{8}\dot{1}$ was sometimes followed by $1000y = 681.681...$, for example. Many responses, however, did show a correct method to convert $0.6\dot{8}\dot{1}$ to a decimal and gained the second method mark. When correct fractions were found for both x and y the first of the two accuracy marks could be awarded. Candidates still had to multiply the two fractions, which earned the third method mark, and give the answer as a fraction in its simplest form. Some responses simplified $\frac{675}{990}$ before multiplying, others wrote the multiplication first and simplified later. Arithmetic errors were often made when simplifying and these errors meant that many responses did not reach an answer of $\frac{5}{33}$ and so could not be awarded the final accuracy mark. In some responses, the fraction had been cancelled correctly but not completely. A few responses made it more difficult for themselves by putting the fractions over a common denominator before multiplying. Some responses attempted to add the fractions rather than multiply them.

Question 14

Probability tree diagrams were very common and these helped some candidates to organise their thinking. Many responses were able to make a start to the process and gain the first mark for finding at least one correct product and they often went on to gain the second mark for finding two or three correct products. In order to decide whether Lee is correct, candidates needed to work out the probability that the sum of the numbers is even and the probability that the product of the numbers is even. They were more successful at working out the probability that the sum is even and this gained the third mark. Having worked out the probability that the sum is even a common error was to compare this probability with the probability that the sum is odd. When attempting to work out the probability that the product is even some responses did not show a complete process because they did not consider both P(even, odd) and P(odd, even). This usually led to the incorrect conclusion that the probability of an even sum and the probability of an even product are equal. The majority of those that showed a full process to find both probabilities were able to complete the arithmetic and make a correct decision. Some lost the final mark because they stated that Lee is correct or they made no clear decision. Cancelling fractions early in the process was unhelpful to some responses when they then came to add them. Some responses chose to try to answer the question by drawing sample space diagrams or by listing possible outcomes. These approaches were sometimes successful but often all the possible outcomes were not found. For some responses the tree diagram was all they managed; they did not know what to do with the probabilities and some added rather than multiplied the probabilities. Some responses worked with the first counter being replaced and they could be awarded at most two marks.

Question 15

Many responses showed that they knew the frequency can be found by multiplying the frequency density by the class width and gained the first mark for one (or more) correct frequencies. Frequencies were often written on the bars of the histogram. Candidates should be encouraged to show the method they use to work out each frequency so that examiners can see if incorrect values come from a correct method. Many responses went on to gain all four marks for working out a correct estimate for the probability that the biscuit will have a weight between 20 grams and 40 grams. Sometimes the accuracy mark was lost because of poor addition and 30 + 100 + 120 + 150 = 300 was a common mistake when finding the total frequency. It was not uncommon for responses to correctly find the number of biscuits with a weight between 20 grams and 40 grams (130) and then not find the total number of biscuits. These responses gained two of the four marks. Weaker responses often used the heights of the bars as frequencies and no marks could be awarded.

Question 16

Part (a) was answered well by those with some understanding of surds and many responses gained the method mark for multiplying both the numerator and the denominator by $\sqrt{7}$ or, less commonly, by $-\sqrt{7}$. The multiplying was usually carried out correctly. The question asked for the answer in its simplest form and so the accuracy mark was not awarded when $\frac{35\sqrt{7}}{7}$ was given as the final answer, which was very common, or when it was simplified incorrectly.

In part (b), writing $\sqrt{27}$ as $3\sqrt{3}$ gained the first mark. This was sometimes seen as the first step and sometimes it was seen later in the process. Some responses started by writing $\sqrt{27}$ as $3\sqrt{3}$ and simplified the numerator of the fraction to $3\sqrt{3}-1$ but made no further progress. Those that realised they needed to rationalise the denominator were often able to show a correct method to do so. Attempts at multiplying both the numerator and the denominator by $2-\sqrt{3}$ or by $\sqrt{3}$ were often seen and gained no credit. Many of those who did multiply the numerator and denominator by $2+\sqrt{3}$ went on to expand the terms correctly but errors were frequently made, often when multiplying $3\sqrt{3}$ by $\sqrt{3}$. One error in the numerator or denominator was condoned for the third mark. Those responses that expanded all the terms correctly were usually able to give a correct final answer although some lost the accuracy mark due to errors in collecting like terms.

Question 17

It was pleasing that many of the responses that demonstrated knowledge of composite functions were able to score full marks for showing that $3\text{gh}(x) + \text{hg}(x) = 0$ has just one solution for x. Working was generally set out well when candidates understood what to do. Algebraic errors were the reason for many responses not getting full marks. Errors often occurred in the simplification of $1 - 3(2x^2 - 1)$ and incorrect terms in the expansion and simplification of $2(1 - 3x)^2 - 1$ were quite common. Some responses expanded $(1 - 3x)^2$ and multiplied by 2 but then forgot to subtract 1. The third mark for substituting into $3\text{gh}(x) + \text{hg}(x) = 0$ could still be awarded when $\text{gh}(x)$ and/or $\text{hg}(x)$ had been simplified incorrectly but correct algebra was needed for the final two marks to be awarded. Some responses incorrectly equated both $3\text{gh}(x)$ and $\text{hg}(x)$ to 0 and lost the mark that would have been gained by simply adding them. If the composite functions were not labelled as $\text{gh}(x)$ and $\text{hg}(x)$ then this could be implied by the setting up of the equation $3\text{gh}(x) + \text{hg}(x) = 0$ or by multiplying the correct composite function by 3. If labelling was not seen or implied then the answer scored no marks. In weaker responses $\text{gh}(x)$ and/or $\text{hg}(x)$ were often interpreted as multiplying $\text{g}(x)$ and $\text{h}(x)$ together.

Summary

Based on their performance on this paper, candidates should:

- practise their arithmetic skills, particularly division and operations with decimals
- take care when carrying out arithmetic operations and check that answers are sensible
- consider using exterior angles as an efficient way of solving problems involving regular polygons
- practise solving algebraic equations and inequalities with fractional coefficients
- practise algebraic and geometric proofs and ensure they understand what constitutes a proof
- ensure that functions and composite functions are labelled clearly

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