

GCSE Examiners' Report

Mathematics

GCSE

Summer 2025

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Introduction

Our Principal examiners' report provides valuable feedback on the recent assessment series. It has been written by our Principal Examiners and Principal Moderators after the completion of marking and moderation, and details how candidates have performed in each unit.

This report opens with a summary of candidates' performance, including the assessment objectives/skills/topics/themes being tested, and highlights the characteristics of successful performance and where performance could be improved. It then looks in detail at each unit, pinpointing aspects that proved challenging to some candidates and suggesting some reasons as to why that might be.¹

The information found in this report provides valuable insight for practitioners to support their teaching and learning activity. We would also encourage practitioners to share this document – in its entirety or in part – with their learners to help with exam preparation, to understand how to avoid pitfalls and to add to their revision toolbox.

Further support

Document	Description	Link
Professional Learning / CPD	WJEC offers an extensive programme of online and face-to-face Professional Learning events. Access interactive feedback, review example candidate responses, gain practical ideas for the classroom and put questions to our dedicated team by registering for one of our events here.	https://www.wjec.co.uk/home/professional-learning/
Past papers	Access the bank of past papers for this qualification, including the most recent assessments. Please note that we do not make past papers available on the public website until 12 months after the examination.	Portal by WJEC or on the WJEC subject page
Grade boundary information	<p>Grade boundaries are the minimum number of marks needed to achieve each grade.</p> <p>For unitised specifications grade boundaries are expressed on a Uniform Mark Scale (UMS). UMS grade boundaries remain the same every year as the range of UMS mark percentages allocated to a particular grade does not change. UMS grade boundaries are published at overall subject and unit level.</p> <p>For linear specifications, a single grade is awarded for the subject, rather than for each unit that contributes towards the overall grade. Grade boundaries are published on results day.</p>	For unitised specifications click here: Results, Grade Boundaries and PRS (wjec.co.uk)

¹ Please note that where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

Exam Results Analysis	WJEC provides information to examination centres via the WJEC Portal. This is restricted to centre staff only. Access is granted to centre staff by the Examinations Officer at the centre.	Portal by WJEC
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Executive Summary

The examination papers in GCSE Mathematics this summer were broadly similar in standard to those of previous series. As is typical, there was some variation in difficulty, with certain questions proving more demanding and others more accessible. Candidates generally performed slightly better on the Unit 2 papers across all tiers compared with Unit 1.

Arithmetic skills were not as secure as they needed to be across all three tiers. At the Foundation and Intermediate tiers, common errors were seen in basic procedures such as column subtraction, multiplying and dividing whole numbers, and working with fractions, decimals and percentages. Although arithmetic was slightly stronger at the Higher tier, fluency with fractional calculations, such as simplifying by cancelling, was still lacking. For example, in question 15b, many candidates did not simplify before proceeding, resulting in unnecessarily large calculations and further arithmetic mistakes. In addition, there are areas of the subject content that continue to show weak understanding year on year. This was again evident in this series, particularly in topics such as converting units, circle theorems, interpreting and using graphs of the form $y = mx + c$, and forming, manipulating and solving multi-step linear equations. Other topics specific to individual units and tiers are covered in the unit reports.

At the Foundation tier, candidates generally demonstrated a good understanding of basic rounding, ordering positive and negative numbers, and identifying the next term in a sequence. While skills involving fractions and percentages were often weak, some candidates were able to successfully convert a simple fraction, $\frac{3}{10}$, into a percentage on Unit 1. Further practice is needed in drawing angles accurately, understanding probability terminology, and performing substitution. In addition, a more secure understanding of the different formulae for area is required.

Similarly, at the Intermediate tier, a lack of knowledge of the different formulae for the areas of shapes proved a common weakness. In particular, many candidates omitted the division by two when using the formula for the area of a triangle. On a more positive note, good responses were seen on topics such as tree diagrams, interpreting pie charts, and quadratic graphs. However, improvement is needed in topics such as forming and solving simultaneous equations, as well as understanding and working with similar shapes.

At the Higher tier, good work was seen in the use of trigonometry, calculations involving fractional and negative indices, and the application of the quadratic formula. However, further practice is needed in several areas, including loci, changing the subject of a formula, and calculating the surface area of cones.

Our digital resources website offers blended learning lessons and knowledge organisers, among other materials. Please ensure you are accessing the correct site with legacy resources (link [here](#)) and not the sister site for the new Made-for-Wales qualification.

MATHEMATICS

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UNIT 1 FOUNDATION TIER

Overview of the Unit

Overall, the questions were comparable with those from previous examinations, and the paper provided a suitable and fair assessment for candidates at the Foundation level. Some questions proved more challenging than others, particularly the questions common with the intermediate tier.

Key areas for improvement include the following:

- Estimating and approximating solutions to numerical calculations (Q1e)
- Drawing an angle from a given point (Q2)
- Understanding and applying probability terminology (Q7)
- Using key circle terms and solving area problems with rectangles, trapeziums, and triangles (Q8,19)
- Forming, manipulating and solving linear equations (Q11,18)
- Working with angles in an isosceles triangle and on a straight line (Q15)

The following topic areas were generally well-understood or well-answered:

- Writing a number in figures when given in words (Q1a)
- Rounding to the nearest hundred (Q1d)
- Writing a fraction as a percentage (Q1b)
- Completing number squares (Q3)
- Calculating the median and mode of data sets (Q5a,5b)
- Placing numbers correctly into a Venn diagram (Q9)
- Solving one-step linear equations (Q10)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Question 1

In question 1(c), many candidates struggled with borrowing (regrouping), leading to frequent arithmetic errors such as the common incorrect answer of 411.

In question 1(d), some candidates rounded 8467.2 as 8500.2

In question 1(e), candidates often missed the purpose of estimation, attempting full calculations (e.g. 9.8×31.2) instead of rounding appropriately.

Question 2

Many candidates struggled with accurate protractor use, often drawing a 46° angle instead of the correct one. Some identified the 134° point correctly but did not connect it to point P.

Question 4(b)

Answers were often prematurely rounded to one or two decimal places (e.g., 3.7 or 3.73), resulting in a B0 for the correct answer only (CAO) of 3.729 kg.

Question 5(c)

Candidates often calculated the sum of the four numbers correctly but failed to divide by the number of values to find the mean.

Question 7

Most students correctly identified square numbers and factors of 21, but many struggled with precise probability language and generating a list that met both conditions: an even chance of a square number and an unlikely chance of a factor of 21.

Question 8 (OCW)

Many candidates struggled to calculate length from area ($\text{Area} \div \text{Width}$) and failed to link the rectangle's length to the semicircle's diameter. The question revealed difficulties with multi-step problem-solving involving geometry and interpreting compound shapes. A common incorrect answer was 180, due to misapplying angle rules. Many did not clearly show their working, with frequent errors such as misuse of the equals sign and missing or incorrect units.

Question 11

Many candidates were unable to combine angle facts with algebra to correctly form an equation (e.g. $9x = 360$). Of those who did form the equation, many subtracted 9 from 360 instead of correctly dividing by 9, indicating confusion over solving linear equations.

Question 12(a)

Many candidates confused exponents with multiplication or doubling, giving answers like $7^2 = 14$ and $2^3 = 6$ instead of 49 and 8. Even when powers were correctly evaluated, a common error was adding the results instead of multiplying them.

Question 13

The most common error was reflecting the shape in one or both bold lines. A few candidates incorrectly shaded the grid to create rotational symmetry of order 2.

Question 16

Many candidates were able to list the multiples of 6 less than 20, however they showed a lack of understanding of how to calculate the square root of 25. A common error was halving 25. Additionally, many candidates misunderstood the term 'product', and instead of multiplying Mari and Ranvir's numbers, they added them.

Question 18

In question 18, many candidates made errors in the initial steps. A common issue was using methods for simplifying expressions instead of solving equations, often leading to incorrect final answers like $5x + 18$.

Questions 19

Many candidates struggled when asked to calculate the height of a right-angled triangle given the area and base. For the triangle AED, many incorrectly calculated the height as 6 cm. In addition, many could not apply the area of a trapezium correctly.

Question 20

Many candidates were working with a time of 90 minutes rather than 1.5 hours. In addition, many opted to work with $90 \div 18$ instead of $18 \div 90$, as it seemed an easier calculation.

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UNIT 1 INTERMEDIATE TIER

Overview of the Unit

Overall, the questions were comparable with those from previous examinations, and the paper provided a suitable and fair assessment for candidates at the Intermediate level. Some questions proved more challenging than others, especially on the second half of the paper.

Key areas for improvement include the following:

- Using non-calculator methods of adding, subtracting, multiplying, and dividing whole numbers, decimals, fractions, and negative numbers (Q1,3,10,14)
- Applying the facts, formulae and definitions that need to be learned (Q9,10,14)
- Forming, manipulating and solving linear equations (Q8,12)
- Solving problems involving the area of a trapezium and triangle (Q9)
- Knowledge and use of the form $y = mx + c$ (Q16)
- Finding the n th term of a sequence where the rule is quadratic (Q17a)
- Forming, manipulating, and solving contextual simultaneous linear equations with whole-number coefficients using algebraic methods (Q18)

The following topic areas were generally well-understood or well-answered:

- Estimating and approximating solutions to numerical calculations (Q3)
- Working with angles in an isosceles triangle and on a straight line (Q5)
- Knowledge that total probability = 1 (Q7)
- Drawing and interpretation of graphs of $y = ax^2 + bx + c$ (Q13b)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Questions 1, 3, 10, 14

Many candidates understood the steps required to answer each question, but arithmetic errors were frequently seen.

In question **1(a)**, many candidates were unable to correctly calculate 49×8 .

In question **3**, place value errors were seen after candidates attempted to find the product of their correct approximations.

In question **10**, although many candidates correctly applied the speed, distance, and time formula, they had difficulties when calculating $18 \div 1.5$. Some, after stating $18 \div 90$, opted to work with $90 \div 18$ instead, as it seemed an easier calculation.

In question **14**, candidates who did not recognise the relationship between 44 lb and 2.2 lb often made errors when calculating $44 \div 5 \times 8$, and then $70.4 \div 2.2$.

Question 2

The most common error was reflecting the shape in one or both bold lines. A few candidates incorrectly shaded the grid to create rotational symmetry of order 2.

Question 6

Many candidates were able to list the multiples of 6 less than 20 and correctly state that $\sqrt{25} = 5$. A common error was halving $\sqrt{25}$. Additionally, many candidates misunderstood the term 'product', and instead of multiplying Mari and Ranvir's numbers, they added them.

Question 8 and 12

Candidates should be discouraged from presenting embedded answers, as these are often later contradicted by their working.

In question 8, common errors were seen in the first step of solving the equation, particularly when dealing with expressions such as $12x - 7x$ or $15 + 3$. However, follow-through marks were available if candidates continued to solve their equations correctly.

In question 12(a), it was encouraging to see that many candidates interpreted the Venn diagram correctly. Although the more efficient method was to construct an equation, several candidates used a trial-and-improvement approach. However, many of them failed to explicitly identify the correct value of x , which was 15.

Question 9 (OCW)

Many candidates incorrectly calculated the height of triangle AED as 6 cm. In several cases, candidates used a correct method to find the area of either trapezia $ABCD$ or $ABCE$ (using their calculated height), but arithmetic errors were evident. Those who chose to work with trapezium $ABCE$ often forgot to add 24 cm^2 to their final answer. Many candidates did not clearly label the stages of their working. Common mathematical form errors included incorrect use of the equals sign (=) and omitting units or providing incorrect units in the final answer.

Question 15

Those who had a clear conceptual understanding of the mean and used calculations such as $5 \times 20 = 100$ and $3 \times 22 = 66$, were generally more successful than those who relied on trial-and-improvement methods.

Question 16, 17, 18, 19, 20

These questions, although some were fairly standard, proved very challenging for a number of pupils.

In all parts of question 16, very few correct answers were seen. Many candidates did not know how to find the gradient or apply the properties of parallel lines.

In question 17(a), many candidates correctly found the number of grey tiles in Pattern 5. In part (b), a number of correct answers were also seen, with candidates successfully continuing the sequence.

In question 18, many candidates did not solve the simultaneous equations using a valid algebraic method, as required. Some omitted units or used kg for both variables, and many attempted to find the values of x and y using trial and improvement.

Question 21

Many candidates were unfamiliar with the angle properties of circles, another topic on the Intermediate Tier. While some candidates were able to correctly find angle x , few understood how to relate x and y within the cyclic quadrilateral. Additionally, only a small number of candidates could accurately state the relevant circle theorem using the correct terminology.

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UNIT 1 HIGHER TIER

Overview of the Unit

As expected, candidates' performances reflected the increasing level of demand as they progressed through the paper. No particular question stood out in terms of lacking attempts.

Key areas for improvement include the following:

- Understanding the properties of the equation of a straight-line $y = mx + c$ (Q5)
- Deducing the n th term of a sequence from visual representations (Q6a)
- Presenting circle theorems accurately, using correct terminology (Q10b)
- Recognising that similar 2D shapes have equal angles but are not necessarily congruent (Q12)
- Working with the surface areas of a solid cone (Q14)
- Using efficient calculation methods, e.g. simplifying dividing by 990 and multiplying by 330 to dividing by 3 (Q15b)
- Understanding the properties of trigonometric graphs (Q17)
- Working with scale factors in different dimensions (Q18)
- Manipulating surds (Q19)

The following topic areas were generally well-understood or well-answered:

- Using a Venn diagram to form and solve a linear equation (Q1)
- Graphs of quadratic functions (Q2)
- Proportional change, given a ratio (Q3)
- Understanding the mean (Q4)
- Solving simultaneous equations (Q7)
- Using bounds of measurements (Q8)
- Factorising quadratic expressions (Q9,16)
- Using straight-line graphs to define a region in the xy -plane (Q13)
- Calculations involving fractional or negative indices (Q15a)
- Calculating probabilities of dependent events (Q20a)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Question 3

Few candidates knew the key fact that 1 kg = 2.2 lb, which hindered successful mass conversion. However, many were able to handle the ratio aspect. OCW marks were sometimes lost due to inadequate labelling, incorrect mathematical notation (e.g. misuse of the equals sign), or missing units.

Question 5

The overall response was disappointing, particularly at this early stage of the paper. Few candidates demonstrated the necessary knowledge of straight-line graphs to gain all 3 marks. In calculating the gradient in part (a), many did not account for the different scales on the axes, or they gave a positive gradient for a line which clearly sloped downwards.

Question 6

Some attempted to use a difference method to find the n th term in part (a). Those who engaged with the diagrams tended to be more successful.

In part (b), many favoured the approach of listing all 12 terms; although valid, this was unnecessarily laborious (in comparison with efficiently solving an equation).

Question 7

Some were penalised for a lack of appropriate algebraic form in setting up their simultaneous equations, in some cases not using two distinct variables.

Question 10

Very few were able to accurately and adequately quote the relevant circle theorem. Incorrect versions included stating that 'opposite angles of a cyclic quadrilateral are equal'.

Question 11

Candidates generally knew how to cross-multiply to form a single fraction, although sign errors were common in the final numerator term. When the denominator of an algebraic fraction is factorised, candidates should recognise that it is best to leave it in that form, as incorrect expansion can lead to unnecessary penalties.

Question 12

A significant proportion incorrectly stated that equal angles should mean that two triangles must be congruent. Some arithmetic errors were seen in calculating the missing angles.

Question 14

Very few gained all three marks, frequently omitting the area of the base of the cone when setting up their equation. For those with a correct equation, the demands of the algebra were often too much. (Successful trial and improvement methods were occasionally seen; these were acceptable here since no particular method had been specified in the question.)

Question 15(b)

Most knew how to convert the recurring decimal into a fraction, but tended to struggle with the subsequent multiplication, sometimes embarking on long-winded, unnecessary (and inaccurate) calculations. Successful alternative methods were very occasionally seen.

Question 16

In a few cases, the factorisation methods used by candidates led to multiples of the correct factors. Since this meant that their expansion would be incorrect, only the final mark was then available (for solving the equation).

Question 17

A correct pair of values was often seen, showing understanding of the graph, but some candidates were penalised for giving additional (incorrect) answers between 0 and 360° .

Question 18

An incorrect answer of 10 was extremely common, from using $75/3=25$ as a scale factor, without recognising the need to cube or to square root.

Question 20

It was evident that some candidates did not know how to multiply fractions, with a small minority attempting to add instead. In part (c), many realised that $5+5+7=17$, but the related probability was often evaluated without accounting for the three possible orderings.

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UNIT 2 FOUNDATION TIER

Overview of the Unit

Most candidates attempted all questions. Generally, they were more successful with the earlier ones, though some were able to tackle questions common to the Intermediate tier, such as the pictogram and pie chart (Q15) and enlargement (Q13a).

Key areas for improvement include the following:

- Recognising 2D shapes when they are irregular (Q2b)
- Substituting into a formula, and rearranging to solve (Q11)
- Understanding tessellations (Q14)
- Calculating the area of a circle (Q17)
- Measuring bearings (Q18b)

The following topic areas were generally well-understood or well-answered:

- Ordering positive and negative numbers (Q1d)
- Recognising 3D shapes (Q2a)
- Finding the next term in a sequence (Q4a)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Question 2(b)

Very few candidates were able to correctly identify the hexagon, which was irregular. Most candidates selected the octagon or pentagon – both of which were regular.

Questions 4(c)

Many candidates were able to find the two missing terms in the sequence but gave the rule as 'add 5' instead of 'subtract 5'.

Question 6

Few fully correct responses were seen in this question, with many candidates confusing the range with the mean.

Questions 7(a)

Some candidates found it challenging to write the value of the calculation correct to the nearest 10. The most common incorrect answer was 380 but some answers of 395.96 were seen – this was obtained by candidates who added 10 on to the value of the calculation.

Question 11

Few candidates were able to correctly substitute the given values into the formula. Many of those who did were able to find the correct value of y .

Question 12(b)

Some candidates were able to correctly calculate the volume of the cuboid, but most simply added the dimensions of the cuboid to get an incorrect answer of 28.

Questions 17

Very few candidates showed awareness of the formula to calculate the area of a circle. Occasionally, confusion with the formula for circumference was seen, but very few candidates attempted to use π .

Questions 18(b)

Very few candidates were able to correctly measure the bearing, with some answers greater than 360 degrees seen.

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UNIT 2 INTERMEDIATE TIER

Overview of the Unit

Overall, the questions were comparable to those asked in previous papers, and the exam represented a suitable and fair test for candidates at the Intermediate level. Some questions proved more challenging than others, particularly in the second half of the paper. As noted in previous series, candidates should be encouraged to use a calculator as much as possible in Unit 2, but they must also remember to show their working where appropriate.

Key areas for improvement include the following:

- Solving problems involving time (Q5)
- Understanding tessellation and regular polygons (Q7)
- Solving problems involving the area of a circle and a square (Q10)
- Bearings and solving problems involving intersecting loci in two dimensions (Q11)
- Solving reverse problems involving probability and profit (Q12)
- Finding missing lengths in similar shapes (Q17)
- Surface area and volume of a cuboid (Q20)

The following topic areas were generally well-understood or well-answered:

- Identifying multiples, square and cube numbers (Q1)
- Substituting positive numbers into a formula expressed in words or in symbols (Q2)
- Solving problems involving time (Q5)
- Translating a shape and enlarging a shape with a positive scale factor (Q6)
- Interpreting a pie chart and pictogram (Q8)
- Adding expressions and collecting like terms (Q9)
- Finding a fraction of an amount and sharing an amount in a ratio (Q16)
- Completing the branches on a tree diagram (Q19a)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Question 5

Many candidates understood the steps required but often made errors when converting times into a common format or expressing their final answer in days and hours. A frequent mistake was attempting to add the times directly without first converting all values into consistent units.

Question 7

Both parts were poorly answered. In part (a), few candidates referred to angles at a point summing to 360° , often just stating “they fitted together.”

In part (b), very few correct answers were seen. Some candidates incorrectly used 720° , mistakenly referring to hexagons.

Question 8 (OCW)

Many candidates correctly identified the number of people who chose green from both the pie chart and the pictogram. However, some struggled to express the final probability as a single fraction, giving answers like $\frac{23}{92}$ and $\frac{20}{60}$ instead. Working was often insufficient or poorly labelled. A common error was writing $\frac{23}{92} + \frac{20}{60} = \frac{43}{152}$ instead of the correct method $\frac{23 + 20}{92 + 62} = \frac{43}{152}$.

Question 10

Questions involving the area of a circle continue to be challenging. Many candidates confused the formulae for area and circumference.

Question 11

Bearings continue to be very poorly answered with 125° being a common incorrect answer. Very few correct perpendicular bisectors were seen in part (c) and many candidates gained 1 mark for the sight of 6cm, but could not draw the correct arc from B .

Question 12

Many candidates were able to identify that 2 out of 5 spinner outcomes were even and correctly calculated the total prize money as £120 ($\frac{2}{5} \times 100 \times £3$). However, a common issue was stopping at this stage without progressing to form an equation involving the total income and expected profit. Some did not relate the profit of £130 to the difference between money collected and money paid out.

Question 13, 17, 18

In question 13, some candidates were able to gain a mark by correctly isolating the $7a$ (or $-7a$) term, but many failed to progress further.

Despite the triangles being right-angled in question 17, many candidates unnecessarily used trigonometry to find the length AB , rather than applying properties of mathematically similar shapes, which was the intended method.

Finding the original quantity given the result of a proportional change continues to be a common area of weakness. In question 18, $1.2 \times 84 = 100.8$ was often seen.

Question 14

Although usually well answered, many candidates continue not to gain full marks as they failed to give two correct evaluations using x in the range $2.25 \leq x \leq 2.45$ where crucially, one answer has to be less than 25 and one answer has to be greater than 25.

Question 19

Most candidates were able to complete the tree diagram correctly. However, many did not recognise that calculating the probability of Megan choosing two balls of the same colour required combining two separate outcomes (red–red and blue–blue). Some only gave the probability of one of the matching pairs, while others added or multiplied incorrect branches.

Question 20

A common issue was not realising that the total surface area of 240 comes from the sum of all six faces, or that the three unique face areas should sum to 120 before doubling. Some candidates attempted a trial-and-improvement method, which occasionally led to the correct height. Others used incorrect formulae or confused surface area with volume, and some did not proceed to find the volume after finding x .

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UNIT 2 HIGHER

Overview of the Unit

Overall, the questions were comparable to those asked in previous papers, and the exam represented a suitable and fair test for candidates at the Higher level. Candidates performed strongly in the first half of the paper which are the questions common to the intermediate tier. A number of candidates had their calculator set to an incorrect angle unit mode (mainly gradians). Candidates lost accuracy marks within multi-step solutions by rounding prematurely.

Key areas for improvement include the following:

- Shading regions bounded by loci (Q1)
- Solving reverse problems involving the surface area of a cuboid to determine its volume (Q9)
- Applying circle theorems with algebraic angles, including understanding the alternate segment theorem (Q10)
- Using upper and lower bounds in calculations (Q11)
- Constructing and using equations that describe inverse proportion (Q12)
- Changing the subject of a formula when the subject appears in more than one term (Q14)
- Proving an algebraic result within a geometric context using the cosine rule (Q15a)
- Interpreting and applying function transformations in graphical form (Q16)
- Using the irrationality of π to prove or disprove geometrical problems (Q18)

The following topic areas were generally well-understood or well-answered:

- Using trial and improvement to solve equations (Q3)
- Pythagoras and right-angled trigonometry (Q4)
- Finding fractions and ratios of amounts combined (Q5)
- Lengths of sides of similar triangles (Q6)
- Reverse percentages (Q7)
- Probability tree diagrams (Q8)
- Reverse problem involving the area of a sector (Q13)
- Solving quadratic equations by using the quadratic formula (Q15b)

Comments on individual questions/sections

When a question or part-question is not listed, there are no areas to highlight.

Question 1

Many candidates did not know that part of the solution was to draw the perpendicular bisector. The majority of candidates gained their marks by correctly drawing the 6cm arc.

Question 4(b)

Although the method is correct, some candidates used the sine rule and/or the cosine rule in their solution instead of basic right-angled trigonometry.

Question 9

Some candidates incorrectly assumed that the cuboid had a square cross section.

Question 10

Candidates were not successful in determining the size of ACD as a simplified expression which required understanding the alternate segment theorem. The final explanation mark was infrequently awarded, mainly because 'alternate segment theorem' was not shown or inaccurately written down (e.g. 'alternate angles', 'opposite angles', etc., was E0).

Question 11

The majority of errors were from using 8 and 1.7 or 1.75 in the formula.

Question 14

After multiplying by the denominator, many candidates then incorrectly expanded, not multiplying y with both terms in the bracket.

Question 15(a)

The majority of errors came from incorrectly substituting the expressions into a , b and c . Also, many candidates incorrectly expanded $(2x + 1)^2$ to $4x^2 + 1$.

Question 16

In part **(a)(i)**, $(24, -3)$ was a common incorrect answer.

In part **(a)(ii)**, $(8, -3)$ was a common incorrect answer.

In part **(b)**, $y = f(-x)$ was the most common incorrect answer.

Question 17

Many candidates did work out FH correctly. However, there were some candidates who also worked out FG unnecessarily and used that value to work out the area of the triangle.

The majority of candidates who attempted this question knew that they had to use $\frac{1}{2}absinC$.

Question 18

Many candidates wrote down the volumes of both solids correctly in terms of r . However, the final correct explanation involving the irrationality of π or that $2\pi/3 \neq 1$ was seldom seen. Many candidates simply said that the two volumes (or expressions) were not equal which was insufficient for the E mark.

Supporting you

Useful contacts and links

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