Qualification Accredited

Oxford Cambridge and RSA

GCSE (9-1)

Examiners' report

MATHEMATICS

J560
For first teaching in 2015

J560/05 Summer 2019 series

Version 1

Contents

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates. The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

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. A full copy of the question paper can be downloaded from OCR.

Paper 5 series overview

This is the second of three papers taken by Higher tier candidates for the GCSE (9-1) Mathematics specification.

Candidates were generally correctly entered at this tier and all were able to access at least some of the questions. It was noticeable that many candidates appeared better prepared for elements of the paper this year and some of the basic skills had improved. There was an improvement in answering types of questions that involved the use of geometrical language when giving reasons and also on some of the longer questions that carried more marks. There were a number of questions that stretched all of the candidates and proved to be effective discriminators. Presentation of working was also better with a more organised approach adopted by many candidates. Responses to most questions were clear, concise and straightforward for examiners to follow.

Candidates who did well on this paper generally did the following:

- Performed standard calculations and routines following the required rubric
- Showed clear, concise and step by step methodology on multi-mark questions
- Used appropriate terminology and precision when asked to give reasons for answers
- Applied knowledge and reasoning to questions set in a novel context.

Candidates who did less well on this paper generally did the following:

- Found it difficult to apply what they had learnt to unfamiliar situations
- Showed a more random approach in the working including trial and improvement on some multi-mark questions
- Had a weaker skills and knowledge understanding of the specification, including the recall of key terminology, formulae and routines
- Were unable to use correct terminology in geometrical reasoning or use a step by step approach on questions that required reasons or to prove or establish a given result.

Question 1

1 Work out $(2 \times 10^3) \times (4 \times 10^4)$, giving your answer in standard form.

.... **[2]**

This question was answered well. Some candidates gave an answer in standard form with the correct figure 8 but with the incorrect power of 10. A few added the two values rather than multiplying them.

Question 2 (a)

2 (a) Simplify fully.

$$\frac{3a^8 \times 2a^5}{a^2}$$

(a) .... **[3]**

Most candidates were successful here in scoring all 3 marks. Some scored 2 marks for simplifying the numerator and reaching $\frac{6a^{13}}{a^2}$ or scored 1 mark for giving an answer of the form $6a^k$. The most common error was to incorrectly subtract the index 2 from both terms in the numerator, e.g. $3a^6 \times 2a^3$.

Question 2 (b)

(b) Solve.

$$\frac{6x - 10}{5} = 1$$

(b) $x =$ .... **[3]**

Most candidates were successful in solving the equation. The higher ability candidates gave a simplified answer 2.5 or $\frac{5}{2}$. Some having made an incorrect first step, e.g. adding 10, were then given credit for a second step that was correct for their equation after the incorrect first step.

Question 3 (a)

3 Ed has a card shop.

(a) He buys a particular card for £1.20 and sells it for £1.68.

Calculate his percentage profit on this card.

(a) .... % **[3]**

This was well answered by many candidates who showed a correct method of $\frac{1.68-1.20}{1.20}\times 100$ and were able to complete this calculation correctly. Higher ability candidates recognised that the fraction could be simplified. Others established the correct fraction leading to the percentage but then made errors in processing. Some compared the increase to £1.68 rather than the original value £1.20.

Question 3 (b)

(b) Ed's profit on "Good Luck" cards in 2018 was £360.
This was a decrease of 20% on his profit in 2017.

Work out Ed's profit on "Good Luck" cards in 2017.

(b) £ .... **[3]**

A number of candidates found the correct answer but fewer were successful here than in part (a).The common error was to reduce £360 by 20%. Credit was given to candidates who recognised that £360 was 80% of the profit in 2017. A few attempted the correct calculation of £360 divided by 0.8 but a number made arithmetic errors when attempting this.

Question 4 (a)

4 **(a)** A sunflower grows at a rate of 4 cm each day.

How many days does it take to grow from a height of 80 cm to more than 1.06 m?

(a) .... **[3]**

This was very well answered. Some candidates left the answer as 6.5 and did not round up as required by the context of the question.

Question 4 (b)

(b) If the sunflower grows at a faster rate, how would this affect your answer to part **(a)**?

.... **[1]**

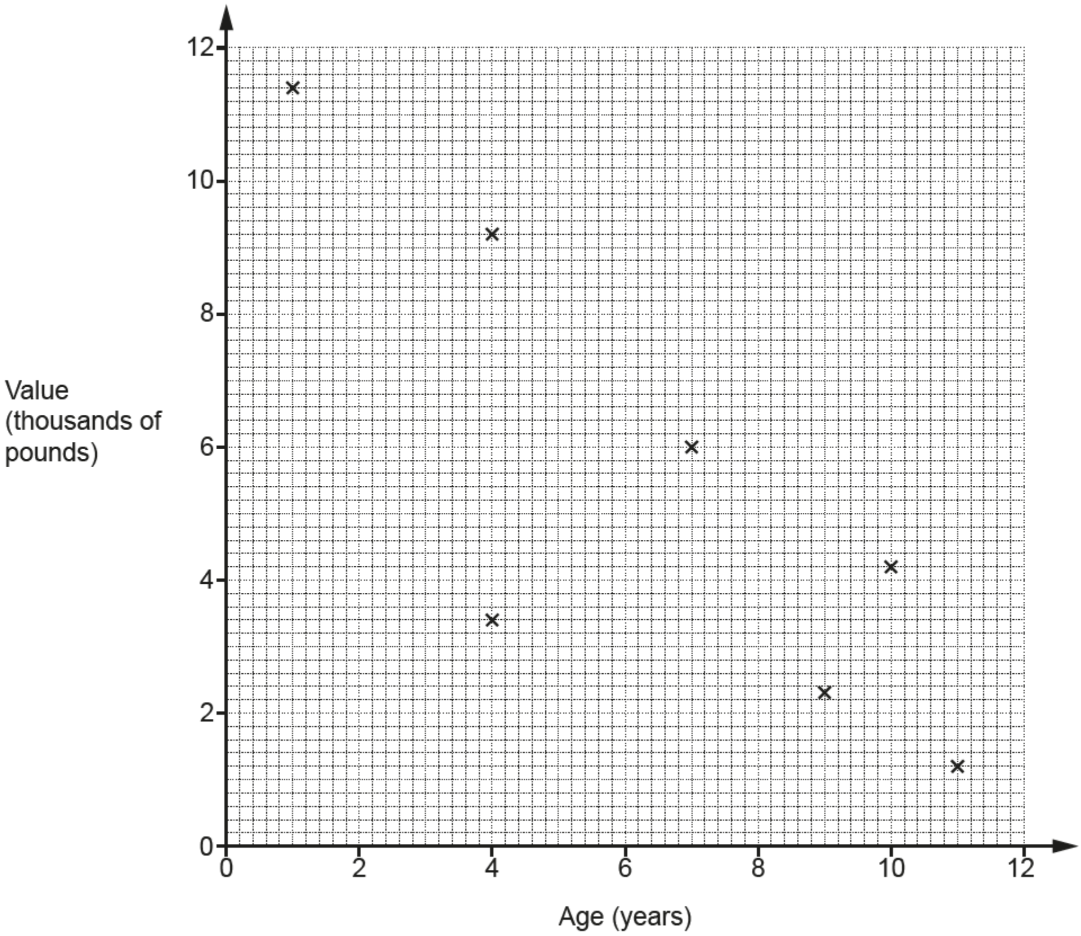
This was very well answered. Almost all candidates realised that fewer days would be needed.

Question 5 (a)

5 The table shows the ages and values of 11 cars of the same model.

Age (years)	4	7	11	1	9	10	4	3	7	8	12
Value (thousands of pounds)	9.2	6.0	1.2	11.4	2.3	4.2	3.4	8.0	5.6	5.0	0.4

The points for the first 7 cars are plotted on the scatter diagram.



(a) Plot the points for the remaining 4 cars. **[2]**

The four points were generally very well plotted. Just a few candidates did not interpret the scales of the graph correctly for the plots involving values 5.6 and 0.4.

Question 5 (b)

(b) Describe the type and strength of the correlation shown in the completed scatter diagram.

.... **[2]**

Most candidates identified it was negative correlation, but fewer correctly described the strength of the correlation. A few incorrectly described the relationship between age and cost rather than the correlation.

Question 5 (c)

(c) One car lost its value more quickly than the other cars.

On the scatter diagram, draw a circle around the point representing this car. **[1]**

This was very well answered by almost all candidates.

Question 5 (d)

(d) By drawing a line of best fit, estimate the value of a car that is 6 years old.

(d) £ .... **[2]**

The majority of candidates drew an acceptable ruled line of best fit. Most gave a correct answer for the value of the car using their line of best fit. A few gave answers such as 6.2 rather than 6200 which was not acceptable.

Question 5 (e)

(e) Explain the limitations of using the equation of the line of best fit to estimate the value of a car that is 16 years old.

....

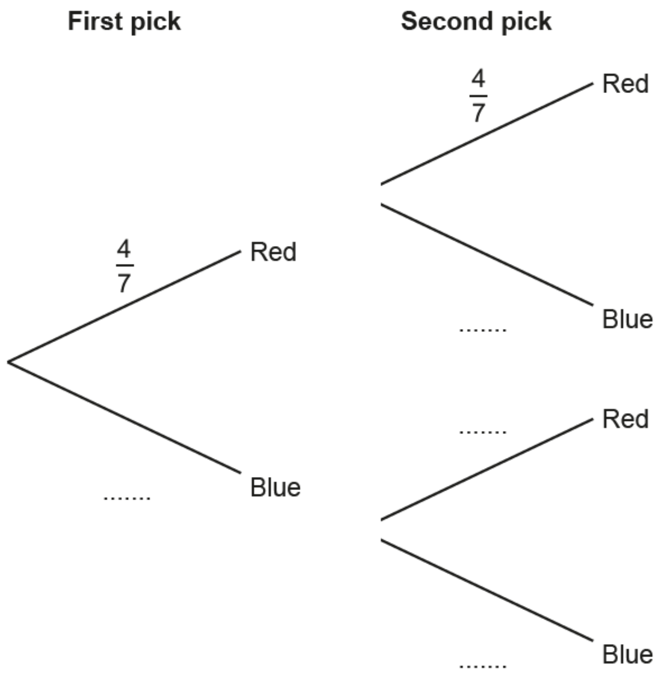
.... **[1]**

The best answers referred to the fact that the trend may not continue or that there was a lack of data beyond 12 years of age. Some candidates referred to the graph stopping at 12 which was not sufficient without referring to the lack of data beyond 12 years old.

Question 6 (a)

6 A bag contains 4 red counters and 3 blue counters only.
Jack picks a counter at random and then replaces it.
Jack then picks a second counter at random.

(a) Complete the tree diagram.



[2]

The majority of candidates completed the tree correctly. A few gave the second pick probabilities for counters that were not replaced after the first pick.

Question 6 (b)

(b) Work out the probability that Jack picks two red counters.

(b) .... **[2]**

The majority of candidates showed the intention to multiply the two fractions, with a minority adding. Of those that multiplied, a small number made arithmetic errors in the calculation. Some unnecessarily tried to simplify the fraction for the answer. In probability questions, where a simplified answer is required, it will be requested in the demand for the question.

Question 7

7 Adam buys some theatre tickets in a sale.

The normal prices are:

£80 for each adult
£40 for each child.

In the sale, the prices are reduced by 15%.
Adam buys 2 adult tickets and 1 child ticket at the sale price.
A 2% booking fee is then added to the total cost of the tickets.

Calculate the total amount that Adam must pay.

Ticket Sale
All prices reduced by 15%

(2% booking fee applies)

£ .... **[6]**

This was very well answered and well presented by the majority of candidates. Candidates appeared confident in their use of percentages in this context. Those that made an arithmetic error in the initial reduction by 15% usually showed a correct method and almost always scored the later marks by correctly completing the next stage correctly with their values. Some found a total cost for one adult and one child instead of two adults and one child. In the final stage the two common errors were to reduce the total cost by 2% and the other was to add 2% of the original cost of the tickets to the sale price.

Exemplar 1

Calculate the total amount that Adam must pay.

15% off 80 = 12

80 - 12 = £78

15% off 40 = 8

40 - 8 = £32

(2 × £78) + £32

= 156 + 32 =

2% of £188 = 3.76

188 + 3.76

=

78
12
100

78
32
100

78
2
156

1.56
2
3.12

1.56 × 2 =

1.88
2
3.76

188.00
3.76
191.76

156
32
188

£ 191.76 [6]

This is an example of the candidate who makes arithmetic error[s] within a partially correct method and illustrates the benefit of showing step by step working to gain method marks.

M2 is earned for showing a correct method of reducing 80 by 15% in lines 1 and 2 even though there is an arithmetic error in getting 78 not 68. The mark scheme allows these marks to be earned for a correct method shown with one of the ticket prices. There is then an error in the reducing the child's price by 15% but the first two method marks have been earned for the work with the adult's price. The total for 2 adults and 1 child is then calculated using their values and this earns M1.

The final M2 is earned for a correct method to increase their total ticket cost by 2%.

Five marks scored in total.

Question 8

8 Mrs Mills buys 4 packs of treats for her cats, Fluff and Tigger.

She gives Fluff $\frac{1}{6}$ of a pack each day.

She gives Tigger $\frac{1}{5}$ of a pack each day.

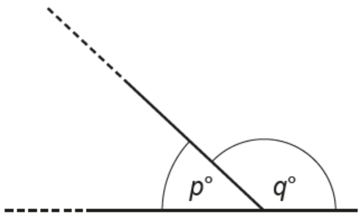
For how many complete days will the 4 packs of treats last?

.... **[5]**

There were many different approaches to this question. Many candidates gained credit for adding $\frac{1}{5}$ and $\frac{1}{6}$ to get $\frac{11}{30}$. For some, there were errors in the addition of these two fractions and a few chose to work with decimal equivalents. Few candidates attempted to divide 4 by $\frac{11}{30}$, opting instead for repeated addition to show $\frac{110}{30}$ and $\frac{121}{30}$. Those using this method were often successful although some incorrectly rounded their answer up to 11 days and others made errors within the addition of the fractions. A common error was to give the answer 22 from working out how many days it would take each cat to consume 2 packs and then adding the number of days together.

Question 9 (a)

9 An interior angle of an isosceles triangle is p° and an exterior angle is q°.



Not to scale

It is given that $q = 5p$.

(a) Write the ratio $p : q$ in its simplest form.

(a) .... : .... **[2]**

This was answered quite well. A few candidates gave an unsimplified ratio and some gave the ratio the wrong way round as 5 : 1. A number of candidates attempted to calculate angles that fitted the relationship $q = 5p$ to form the ratio and these were less successful.

Question 9 (b)

(b) Work out the two different possible sets of angles for the isosceles triangle.

(b) Triangle 1: ....°, ...°, ...°

Triangle 2: ....°, ...°, ...°
[4]

This was reasonably well answered, and many candidates were able to give the answer for at least one of the possible sets of angles, usually 30, 75, 75. Some did not link parts (a) and (b) together and gave two sets of angles for any isosceles triangle that did not fit the condition $q = 5p$.

Question 10 (a)

10 (a) Write $\frac{1}{6}$ as a recurring decimal.

(a) .... **[2]**

There were mixed responses to this question with around half of the candidates giving the correct answer and using the correct notation. A few used incorrect notation to record the recurring decimal, $0.\dot{1}\dot{6}$ for example, while others attempted division methods but made errors within the division. A common error was to give the answer $16.\dot{6}$ resulting from an omission to include a decimal point in the division.

Question 10 (b)

(b) Elsa divides a two-digit number by another two-digit number.
She gets the answer $0.1\dot{5}$.

She says that there is only one possible pair of numbers that will give this answer.
Is she correct? Show how you decide.

.... **[4]**

Candidates usually knew how to start this question by trying to convert the recurring decimal to a fraction and many showed a correct method in doing this. There were sometimes errors from a subtraction in the method resulting in a fraction of $\frac{14}{99}$ or $\frac{15}{90}$ rather than $\frac{14}{90}$ but many were able to reach this fraction. Higher ability candidates then went on to consider at least one other equivalent fraction before coming to a conclusion. A number of candidates were successful in scoring all 4 marks.

Question 11 (a)

11 (a) Simplify fully.

$$\sqrt{200}$$

(a) .... **[2]**

Many candidates answered this well and chose the highest square factor of 200 before simplifying the surd. A few chose other square factors such as 4 or 25 and gave answers $2\sqrt{50}$ or $5\sqrt{8}$ for which partial credit was given. For a number of candidates, this topic appeared unfamiliar.

Question 11 (b)

(b) Evaluate.

$$8^{\frac{1}{3}}$$

(b) .... **[1]**

Many candidates were successful in answering this question and had a clear understanding that the cube root was required. There were a variety of incorrect answers too including confusion with negative and fractional indices. A common error for lower ability candidates was to give the answer $\frac{8}{3}$.

Question 12 (a)

12 Here are two functions.

Function A $x \rightarrow \boxed{\times 3} \rightarrow \boxed{-2} \rightarrow y$

Function B $x \rightarrow \boxed{+7} \rightarrow \boxed{\times 2} \rightarrow y$

(a) Find an algebraic expression for the output of the **inverse** of function A when the input is x.

(a) .... **[2]**

A minority of candidates answered this correctly. Some candidates were able to form the correct expression for x in terms of y but then did not rewrite this as an expression for y in terms of x. Others understood the reverse process required but did the operations in the wrong order and $\frac{x}{3}+2$ was often given as the answer. Others did not understand the term inverse in this context and gave answers such as $3x - 2$.

Question 12 (b)

(b) Here is a composite function C.

Function C $x \rightarrow \boxed{\text{Function A}} \rightarrow \boxed{\text{Function B}} \rightarrow z$

Find the value x when $z = 4x$.

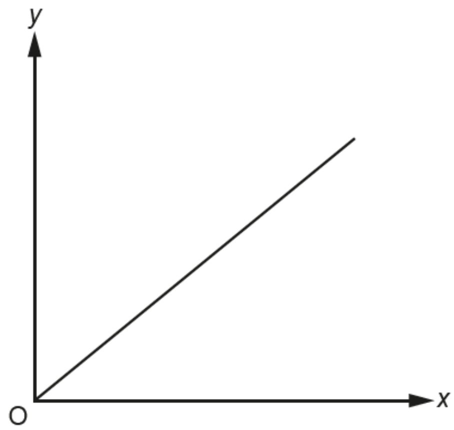
(b) $x =$ .... **[5]**

A minority of candidates answered this correctly. Those candidates that attempted to form an equation using x and $4x$ and the two functions A and B were often successful. Some attempted to set up an equation but gave this in two variables x and z and were unable to make further progress to the solution. Credit was given to candidates who were able to use algebra to form expressions in x that represented at least two of the stages using either function A or B, e.g. $3x - 2$ working forwards from x , or $2x - 7$ working backwards from $4x$ (z). A number of candidates who attempted to set up the equation did not include brackets within their method as they worked through the operations in function A and function B, e.g. $x \times 3 - 2 + 7 \times 2 = 4x$.

Some candidates attempted trial and improvement methods with random numbers which were often unsuccessful.

Question 13

13 Shirley is asked to sketch a graph of $y = 5^x$ for $x \geqslant 0$.
She produces the following.



The graph has two errors.

How should they be corrected?

1 ....

....

2 ....

.... **[2]**

This question proved to be an effective discriminator and asked candidates to explain how the graph should be corrected. Candidates were expected to explain that the graph should be an increasing curve passing through (0, 1) rather than (0, 0). Many candidates explained that the graph should be a curve or should not pass through (0, 0) but their answers lacked the fine detail required.

A common error was to say that the graph should pass through (0, 5).

A few candidates drew a correct sketch to supplement their answer which was acceptable as a response.

Exemplar 2

1 it should be a curve instead of straight line

2 the graph is not fully complete as it does not meet the edges **[2]**

In this exemplar, the candidate states that the graph should be curved but then does not describe the shape of the curve which is required in the reason.

The second reason does not address the incorrect *y*-intercept.

Exemplar 3

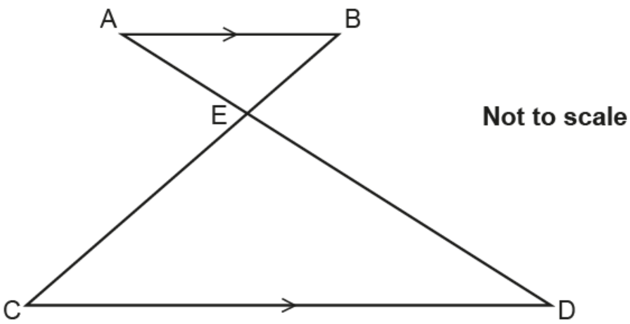
1 It should be a line curving upwards

2 It should go though the y intercept of 1 **[2]**

A model answer to this question giving precise details of the shape of the curve and the *y*-intercept. Two marks are scored.

Question 14

14 In the diagram AB is parallel to CD.
AED and BEC are straight lines.



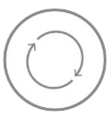
Prove that triangle ABE is similar to triangle CDE.

[3]

There were a number of excellent proofs written systematically line by line with a correct geometric reason given for each statement and each angle described clearly. Some candidates listed the angles that were equal and gave reasons but then made no conclusion about why the triangles were similar.

Others indicated the equal angles but then gave either no reasons or incorrect reasons such as corresponding angles rather than alternate angles.

Some candidates confused congruency with similarity and referred to lengths within their proof.

	**AfL**	When describing angles, candidates should take care to ensure there is no ambiguity in the description of the angle, e.g. use the notation angle CED rather than angle E.

Exemplar 4

~~Aa~~ ABE = BCD because alternate angles are equal

~~AE~~ BAE = EDC because alternate angles are equal

Sum of ECD + EDC, ~~x~~ taken away from 180 gives angle

~~AEB~~ CED as angles in a triangle add to 180°. [3]

Angle AEB = CED because they are opposite.

In this exemplar, the candidate has described all three pairs of equal angles in the two triangles and given reasons using the correct terminology. This is sufficient to earn M2.

There is no conclusion however stating why the two triangles are similar.

This response scores 2 marks in total.

Exemplar 5

AEB = CED as vertically opposite angles are equal.

BAD = ADC as alternate angles are equal.

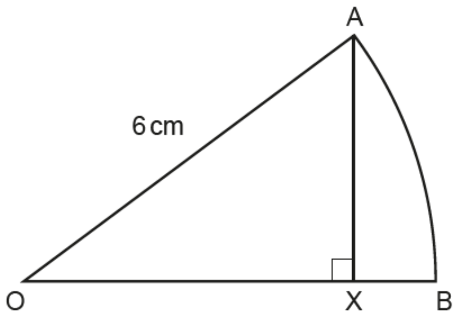
BCD = ABC as alternate angles are equal

△ABE is mathematically similar to △CDE by AAA. [3]

A model answer with all pairs of equal angles identified and correct reasons given. A correct conclusion confirms the proof. All 3 marks are scored.

Question 15

15 OAB is a sector of a circle, centre O.
OA = 6 cm and AX is perpendicular to OB.



Not to scale

The area of sector OAB is $6\pi\,\text{cm}^2$.

Show that $AX = 3\sqrt{3}$ cm. **[6]**

This question required candidates to show step by step reasoning to establish the given result.

The higher ability candidates set up a correct equation involving the formula for the area of the sector. They equated this to 6π or established that the sector had an area of $\frac{1}{6}$ of the circle by showing the calculation for the area of the circle and comparing it to the given area of the sector, and then showed that 360 ÷ 6 = 60°. They then used a trigonometrical argument with the fact that sin 60 = $\frac{\sqrt{3}}{2}$ to establish the given result.

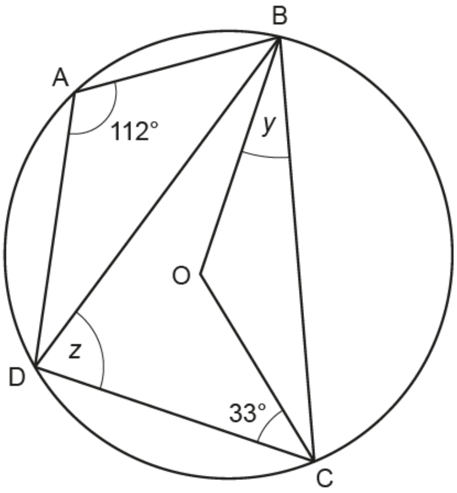
Many candidates missed out important details or steps within their working and others used the given result that AX = $3\sqrt{3}$ within a circular argument that gained little credit.

	AfL	In these types of questions, it is important that candidates provide clear detail in their answer and do not omit any of the stages. They should not use the given result within their explanation.

Question 16 (a)

16 A, B, C and D are points on the circumference of a circle, centre O.

Angle BAD = 112° and angle DCO = 33°.



Not to scale

(a) Show that angle $y = 35°$.
Give reasons for each stage of your working. **[4]**

There were many excellent answers to this question where candidates used the correct geometric reasoning and language in their explanations, and this area of candidates' work is improving. As this is a 'Show that' question it is important that candidates show every stage of their working explicitly and do not omit any stages. A concise reason such as cyclic quadrilateral is acceptable but if candidates give longer reasons then it is important that they use the correct terminology and do not add anything that is incorrect to their statement. Some candidates confused the angles in their explanation, for example calling angle BCO, angle BCD. A common misconception was to regard triangle ABD as isosceles and give angles ADB and ABD as 34°.

Exemplar 6

180 − 112 = 68°

68° − 33° = 35°

∠DCB = 68° because opposite angles in a cyclic quadrilateral add to 180°.

∠OCB = 35° because it adds to ∠DCO (33°) to make 68° for the cyclic quadrilateral.

y = 35° because OBC is an isocoles triangle so y = ∠OCB = 35°

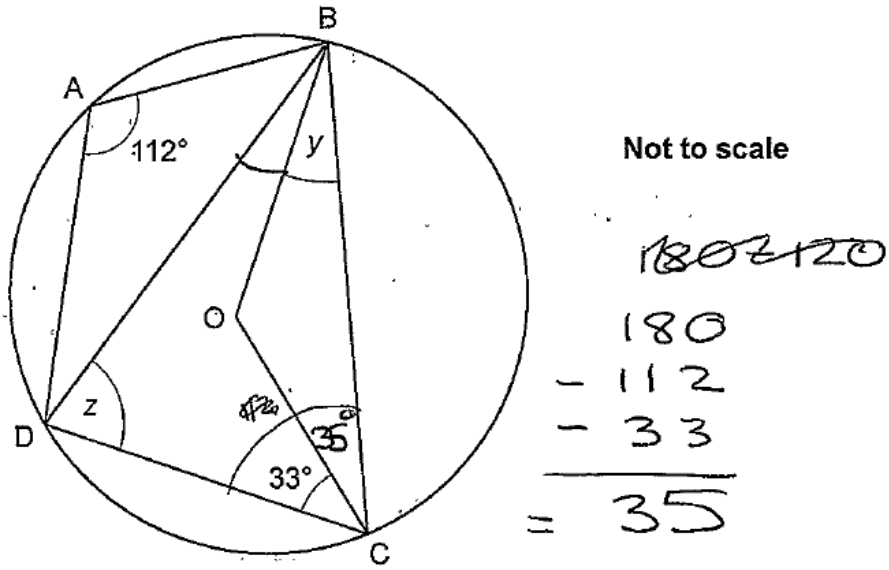
OBC = isoccoles triangle because OB and OC are radii therefore equal in length.

(b) Work out angle z.
Give reasons for your answer.

This is a 'Show that' question so the candidate must show each step of their working and use the correct geometrical terminology to arrive at the given answer.

The work is well explained with correct terminology relating to angles in circles and angles in triangles. The correct calculations are explicitly shown as subtractions leading to y = 35. There are no errors in the description of the angles. Four marks are scored in total.

Exemplar 7



(a) Show that angle $y = 35°$.
Give reasons for each stage of your working. **[4]**

opposite angles = 180°

~~112 − 33 =~~

180 − 112 = 68
− 33
35

$y = 35°$

BOC = isocceles triangle

In this example, the calculations leading to y = 35 are shown and are correct. The angles linked to each calculation are not described but the explanation is sufficiently clear and some angles have been marked on the diagram to support the calculations. None of the calculations have been linked to an incorrect angle and so are acceptable.

The reason 'opposite angles = 180°' is not acceptable as the candidate has not used the correct terminology involving cyclic quadrilateral.

The final written reason is acceptable with y = 35 stated.

3 marks are scored altogether.

Question 16 (b)

(b) Work out angle z.
Give reasons for your answer.

Angle z = ...° because ....

....

.... **[3]**

Candidates found this part more difficult than part (a). There were again a number of excellent answers using the correct terminology and giving two supporting reasons for the answer. The more common errors included giving an answer of 56° from the misconception that angle ADC was 90° and angle ADB was 34°. The reason 'angle at the centre is twice the angle at the circumference' was often given correctly with fewer using incorrect terminology in this reason than in previous sessions. The other reason 'Angles in a triangle sum to 180°' was sometimes overlooked. Candidates should use the mark allocation for questions as a guide as well as the demand to what is required and in this case 3 marks and the demand 'Give **reasons**' is an indication that two reasons are required.

Question 17 (a)

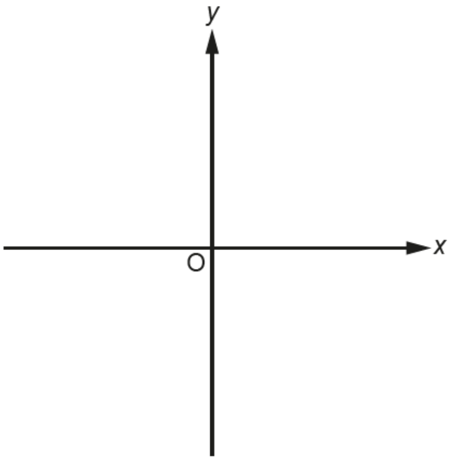
17 (a) Write $x^2 + 8x + 3$ in the form $(x + a)^2 - b$.

(a) .... **[3]**

Many candidates were familiar with the manipulation required, were successful in completing the square for the quadratic expression and scored all 3 marks. A few recognised that the expression should contain $(x + 4)^2$ but then were unable to complete the square correctly.

Question 17 (b)

(b) Sketch the graph of $y = x^2 + 8x + 3$.
Show clearly the coordinates of any turning points and the y-intercept.



[4]

There were some excellent, fully correct sketches showing the shape, the coordinates of the turning point and the *y*-intercept. Many candidates demonstrated they understood the link between parts (a) and (b). Other candidates recognised the shape of the graph and sketched it reasonably well. Some did not indicate the required key values clearly on their sketch or placed the turning point in the incorrect quadrant of the graph. Others did not use the answer to part (a) and tried to complete a table of values and then plot points often with little success.

Question 18

18 21 people travelled to a meeting.

- 12 used a train.
- 6 used a car.
- 7 did not use a train or a car.
- Some used a train and a car.

Two people are chosen at random from those who used a train.

Find the probability that both these people also used a car.

.... **[6]**

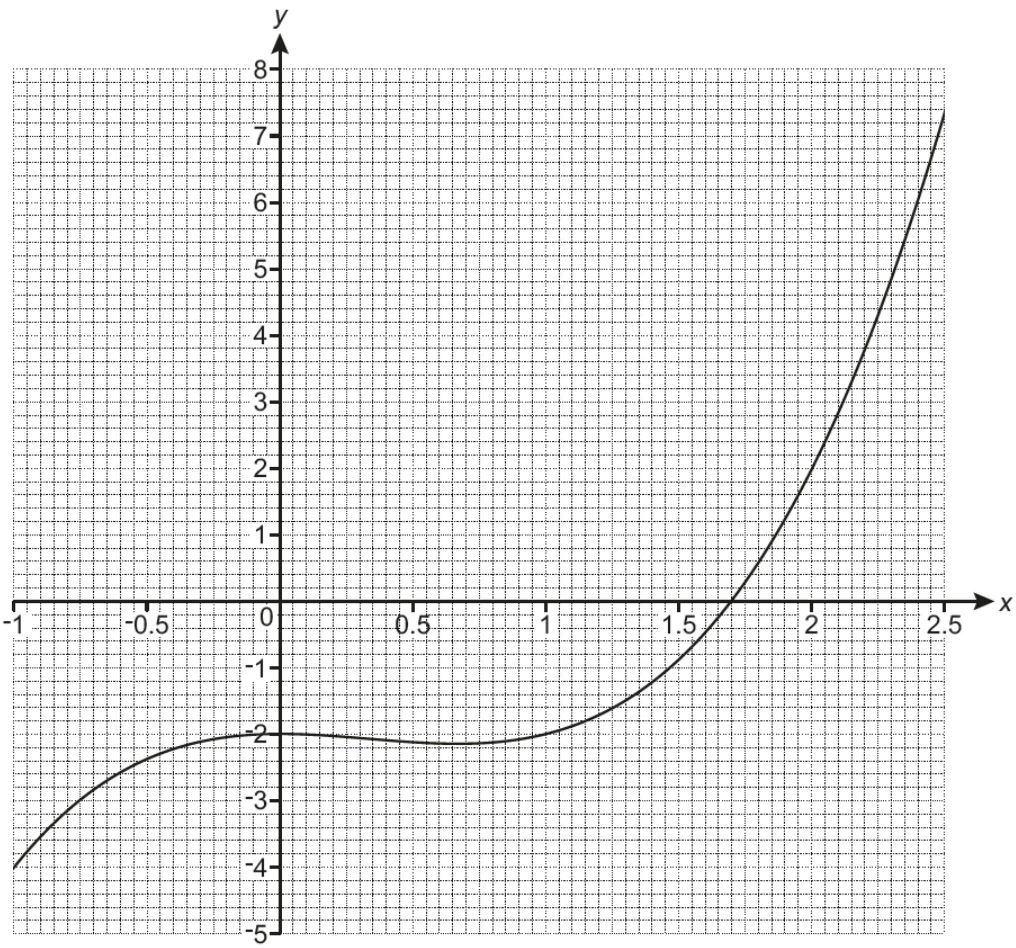
Many candidates made a good attempt at this question although fully correct answers were rare. A number of candidates were able to reach a correct probability of $\frac{4}{12}$ for a person chosen at random from those who used a train also using a car. Most finding this probability were then unable to go on to calculate the probability that two people who used a train also used a car. Some attempted combined probabilities but did not see these as dependent events and did $\frac{4}{12} \times \frac{4}{12}$ while others gave $\frac{4}{12}$ as their final answer.

Other candidates gained credit when working out that 4 people used both a train and a car but then a probability of $\frac{4}{21}$ was a common error. Many candidates sensibly attempted to use a Venn diagram to represent the information and were able to gain some credit for correctly completing the diagram or partially completing it with some correct values.

Those that attempted tree diagrams met with less success and often worked with probabilities out of 21.

Question 19 (a)

19 The graph of $y = x^3 - x^2 - 2$ is drawn on the grid.



(a) Use the graph to solve $x^3 - x^2 - 2 = 0$.
Give your answer correct to 1 decimal place.

$x =$ .... **[1]**

This was well answered by many candidates, with most reading the intercept of the graph with the *x*-axis correctly.

Question 19 (b) (i)

(b) The equation $x^3 - x^2 + 5x - 6 = 0$ can be solved by finding the intersection of the graph of $y = x^3 - x^2 - 2$ and the line $y = ax + b$.

(i) Find the value of *a* and the value of *b*.

(b)(i) $a =$ ....

$b =$ .... **[2]**

Very few candidates were able to transform the equation to give the values of *a* and *b*. A common error was to give the values 5 and ⁻4. A large number of candidates omitted this part completely.

Question 19 (b) (ii)

(ii) Hence, **use the graph** to solve the equation $x^3 - x^2 + 5x - 6 = 0$.
Give your answer correct to 1 decimal place.

(ii) $x =$ .... **[3]**

Those candidates that gave the correct values for *a* and *b* in the previous part usually scored all 3 marks here for a correct ruled line on the graph and a correct intercept. Credit was given to candidates who drew a ruled line on the graph for their value of *a* and their value of *b* from part (b)(i) and as a consequence some others achieved part marks here. A large number of candidates omitted this part completely.

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For further details of this qualification please visit the subject webpage.

Review of results

If any of your students' results are not as expected, you may wish to consider one of our review of results services. For full information about the options available visit the OCR website. If university places are at stake you may wish to consider priority service 2 reviews of marking which have an earlier deadline to ensure your reviews are processed in time for university applications.

activeresults

Review students' exam performance with our free online results analysis tool. Available for GCSE, A Level and Cambridge Nationals.

It allows you to:

- review and run analysis reports on exam performance
- analyse results at question and/or topic level*
- compare your centre with OCR national averages
- identify trends across the centre
- facilitate effective planning and delivery of courses
- identify areas of the curriculum where students excel or struggle
- help pinpoint strengths and weaknesses of students and teaching departments.

*To find out which reports are available for a specific subject, please visit ocr.org.uk/administration/support-and-tools/active-results/

Find out more at ocr.org.uk/activeresults

CPD Training

Attend one of our popular CPD courses to hear exam feedback directly from a senior assessor or drop in to an online Q&A session.

Please find details for all our courses on the relevant subject page on our website.

www.ocr.org.uk

The small print

Looking for a resource?

There is now a quick and easy search tool to help find **free** resources for your qualification:

www.ocr.org.uk/i-want-to/find-resources/

www.ocr.org.uk

OCR Customer Support Centre

General qualifications

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Facsimile 01223 552627
Email general.qualifications@ocr.org.uk