OCR
Oxford Cambridge and RSA

GCSE (9-1)

Examiners' report

MATHEMATICS

J560
For first teaching in 2015

J560/02 Summer 2018 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 J560/02 series overview

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

The paper was appropriate for foundation level with very few candidates scoring more than 70, indicating that the majority of candidates had been entered at an appropriate level, and the paper was sufficiently challenging. The number of instances where no response was offered seemed to be generally low; the questions were accessible to the majority of candidates and allowed them the opportunity to show their mathematics skills. There was no evidence indicating that candidates ran out of time.

Multi-step questions and a higher element of ratio and proportion in this new specification are a challenge, as is the content new to foundation candidates. This was evident in question 11 - involving ratio, question 12(b) - expanding double brackets, question 12(c) - solving inequalities and question 13(b) - standard form. Also new to this specification, the Venn diagram question was well attempted with a good success rate.

Candidates find working algebraically a significant challenge. Other areas for development of understanding: order of operations, calculating with negative numbers, angle reasons associated with parallel lines and use of correct notation for angles. Although candidates can often calculate angles well many do not support their work with reasons. Basic arithmetic skills were sometimes unreliable and it was noticeable throughout that some, though fewer, still write numbers in a division the wrong way around.

Some of the problem solving questions, which required effective communication skills, were not executed particularly well. The spaces allowed for working were often covered with a variety of calculations that were disorganised and difficult to follow. Responses need to be logical and follow a clearly labelled, step-by-step process in order to score effectively.

Presentation continues to improve. Candidates should be encouraged to write clearly, as this will reduce the chance of them getting confused by their own work or misreading their own figures, which can lead to incorrect answers.

Candidates should be aware of the need to check whether their answers are reasonable in the context of the questions. For example, in question 2(b) an answer greater than 2.4 cannot be correct, and in question 17(c) an answer of 2.8 metres per minute is far too slow. It is important that candidates go through and thoroughly check their work if they have any spare time. It is clear that some straightforward marks were lost for very basic errors.

Question 1(a)

1   (a) Write down a multiple of 6 between 10 and 20.

(a) .... **[1]**

Some candidates provided more than one answer but mostly these were both correct (12 and 18). Errors came from providing a multiple of 6 that was outside of the required boundary.

Question 1(b)

(b) Write down two factors of 30 that are prime numbers.

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

Many answers were fully correct. Having one correct prime factor was common as some candidates thought 1 was a prime number. Other errors came from giving factor pairs rather than two prime factors so 2 and 15 or 5 and 6 were seen.

Question 2(a)(i)

2   (a) Write these fractions as decimals.

(i) $\dfrac{9}{10}$

(a)(i) .... **[1]**

A number of candidates gave an answer with additional trailing zeros eg 0.90 which was acceptable. Common errors were 0.09 and 9.10.

Question 2(a)(ii)

(ii) $\dfrac{3}{4}$

(ii) .... **[1]**

If a candidate scored in part (i) they mostly got this part correct too. Of the errors made, 0.25, 0.34 and 3.4 were common responses.

Question 2(b)

(b) A plank of wood 2.4 m long is cut into 6 pieces of equal length.

How long is each piece?

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

If candidates did not achieve full marks the majority gained at least 1 mark by knowing to divide 2.4 by 6 or 24 by 6. Some wrote $\frac{2.4}{6}$ and then attempted the division with the numbers reversed. Sometimes, when using whole numbers, conversion back to decimal form was not considered resulting in an answer of 4. Other errors were to divide by 2 then divide by 2 again or to do 2.4 × 6.

Question 3(a)(i)

3 (a) Work out.

(i) 10^3

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

Many understood that $10^3 = 10 × 10 × 10$ but an answer of 30 was a frequent error. This followed working showing 10 × 10 × 10 = 30, 10 + 10 + 10 = 30 or 10 × 3 = 30.

Question 3(a)(ii)

(ii) $9(8 - 3 \times 2)$

(ii)   .... **[2]**

There were mixed levels of success in dealing with mathematical order. An approach to expand the brackets by multiplying 9 by each term inside the bracket eg $9(8 - 3 \times 2) = 72 - 27 \times 18$ led to a variety of incorrect answers being seen. Answers of 90 or ⁻18, both credited with a special case mark, arose from common arithmetic misconceptions. The incorrect answer of 19, which was often seen, came from incorrectly evaluating 8 – 3 first, multiplying by 2 and then adding this value to the number in front of the bracket.

Question 3(b)

(b) Put brackets into this sum so that the answer is correct.

$1 + 2 \times 3 + 5 = 17$ **[1]**

Some candidates gave an answer without any working while others trialled several positions of the brackets. Incorrect arithmetic was often seen with trials. Irrelevant and unnecessary brackets were also seen sometimes such that the first term inside a bracket was an operational symbol eg $1 + 2 (\times 3 + 5)$.

Question 4(a)(i)

4   **(a)** Simplify.

(i) $5x - 6y - x + 3y$

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

Most candidates correctly stated $4x$ although $6x$ was sometimes seen. Many completed the expression as $4x + 9y$, $4x - 9y$ or $4x + 3y$. This comes from candidates remembering some aspects of negative numbers but not applying them correctly.

Question 4(a)(ii)

(ii) $w^8 \div w^2$

(ii)   .... **[1]**

Many knew to subtract the indices; the main misconception was dividing 8 by 2 to give w^4. Other errors were w^{10} from 8 + 2 and occasionally w^{16} from 8 × 2.

Question 4(a)(iii)

(iii) $5c^2d \times 3c$

(iii)   .... **[1]**

Correctly finding the overall power for c was difficult for many candidates leading to an incorrect answer of $15c^2d$. Others added the 5 and 3 giving a coefficient of 8 or did $5^2 \times 3$ leading to $75c^3d$. In some answers the multiplication sign was left in the expression eg $15 \times c^3d$.

Question 4(b)(i)

(b) Work out the value of

(i) $4x - 7$ when $x = 5$,

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

This was answered correctly by most candidates. Some errors in subtracting led to answers of 12 or 14. Replacing the x with 5 giving $45 - 7 = 38$ or adding 4 rather than multiplying leading to an answer of 2 were both seen.
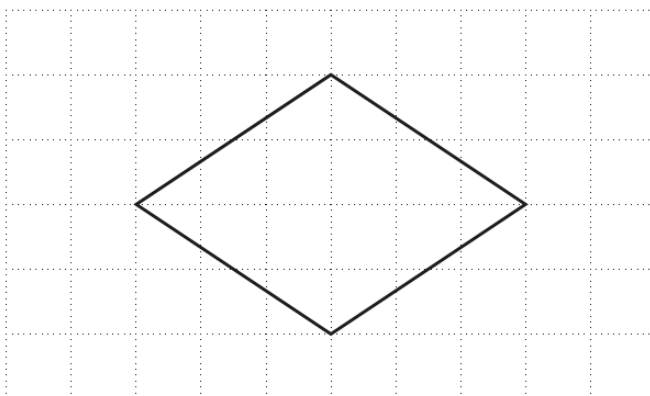
Question 4(b)(ii)

(ii) $\dfrac{p+7}{3}$ when p = 2.

(ii)   .... **[1]**

This was well answered with just some incomplete processing leaving the answer as $\dfrac{9}{3}$ or $\dfrac{3}{1}$.

Question 5(a)

5   A shape is drawn on a one-centimetre grid.

(a) Ring the mathematical name of the shape.

Pentagon   Square   Octagon   Rhombus   **[1]**

The majority of candidates correctly identified the shape as a rhombus. Square was the most common error with a very small number of pentagons and octagons chosen. Rarely, a candidate left part (a) blank but then wrote 'rhombus' in part (b).

Question 5(b)

(b) How many lines of symmetry does the shape have?

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

The incorrect answer of 4 was seen almost as often as the correct answer of 2. Given the number of candidates who identified the shape as a square in part (a), this misconception was expected.

Question 5(c)

(c) Work out the area of the shape.

(c) .... cm² **[2]**

There were few correct answers here and the method of splitting the shape into 4 or 2 triangles was rarely seen. The correct answer of 12 was mostly seen without working. Many candidates attempted to find the side lengths of the rhombus stating a value between 3 and 4. The area was then calculated as eg 3.6 × 3.6. A few calculated the perimeter. Some used estimation when attempting to count squares, this often led to an answer of 11.

Question 6(a)

6   This bar chart shows the average monthly expenditure, by category, of households in a particular town in 2005 and 2015.

(a)   In which category was there a decrease in the average monthly expenditure between 2005 and 2015?

(a)   .... **[1]**

This was correctly answered by most candidates. 'Housing' was the incorrect alternative given, the result of a misinterpretation of the question and identifying the greatest difference between 2005 and 2015.

Question 6(b)

(b)   How much more was the average monthly expenditure on housing in 2015 than in 2005?

(b)   £ .... **[2]**

Many correct answers were given, as well as candidates earning 1 mark for 480 or 560 seen. Where calculations were evident, reading from a graph was well executed by most. Some errors arose from misinterpreting the scale and others when subtracting the 2 values.

Question 6(c)

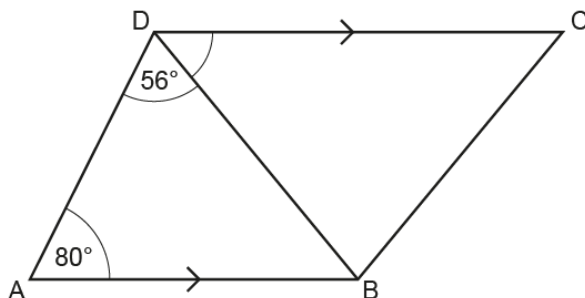(c) The total average monthly expenditure in 2005 was £1200.

What percentage of this was spent on transport?

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

This question presented more of a challenge. 240 and 1200 were often identified and in some cases $\frac{240}{1200} \times 100$ was written but the calculation was not completed. Many candidates stating $\frac{240}{1200}$ showed no evidence of attempting to produce a percentage. Many reversed the division and calculated 1200 ÷ 240 leading to an answer of 5%. Some gained M1 for 10% = 120. A few candidates found the difference between 1200 and 240 (£960) and not the percentage.

Question 7

7   In the diagram, AB is parallel to DC.

Not to scale

Work out angle BDC.
Give a reason for each angle you work out.

....° **[4]**

Most candidates followed a method that firstly found angle ABD using angles in a triangle add to 180°
then alternate angles to find angle BDC. Calculations were often shown but were commonly not
supported by reasons. For some, the reasons did not match their method. Three letter notation for
angles appeared to confuse many. 44° was often labelled correctly on their diagram but angles in
working were labelled using the single letters B and D which is incorrect. The answer line often consisted
of three numbers or 180°. Many candidates who included reasons scored for angles in a triangle add to
180°. Alternate was often confused with corresponding or parallel. There are still a few stating Z angles
and while this does show an understanding it is not the correct mathematical term so is unacceptable.
Some are stating angles on a straight line but are using this incorrectly, referring to two angles at either
ends of a line. A few assumed that AD was parallel to BC.

Question 8

8   Liam is 0.83 metres tall.
    William is 1.31 metres tall.
    Jacob is taller than Liam by half the difference between Liam's height and William's height.

    How tall is Jacob?

.... m **[3]**

Many correct answers were seen. The preferred method was to find the difference between 1.31 and 0.83, half this and add to 0.83. These calculations produced several arithmetic errors. Many candidates who identified 0.48 then 0.24 left that as their answer or added it to 1.31 rather than 0.83. Although some candidates chose to find the mean of the two heights given, a common error was to then add this on to the lower height. Others using this method chose to half each height separately then add, ignoring the decimals, which occurred, so reached an inaccurate answer. In a number of instances 2.14 ÷ 2 resulted in an answer of 1.7. In both methods, there was little evidence of an answer being considered for its 'reasonableness' as there were many answers that did not lie between 0.83 and 1.31. A few adopted a method of listing values from 0.83 in 0.01 jumps until 1.31 was reached, then they identified the mid-value. This was time consuming and numbers in the list were often missed out.

Question 9(a)

9 **(a)** Elise wants to divide a sum of money between Hannah and Adil in the ratio 2 : 3.

Elise says:

$$\text{Hannah will get } \frac{2}{3} \text{ of the money.}$$

Explain why Elise is not correct.

....

.... **[1]**

Many candidates recognised how fractions and ratios are formed and the difference between them. Scoring responses showed the denominator error by stating Hannah should have $\frac{2}{5}$. Others pointed out that Hannah should have less than Adil or that Adil should have more, so $\frac{2}{3}$ for Hannah could not be correct. Many clearly expressed why 2 : 3 and $\frac{2}{3}$ did not represent the same share. Candidates not scoring often provided incomplete explanations. Some referred to adding 2 and 3 but did not develop their answer with reference to the denominator in the fraction. Some responses stated that ratio and fractions are not the same without referring to this specific case.

Question 9(b)

(b) George has a different sum of money.
He divides the money between Siobhan and Iwan.

Iwan receives $\frac{11}{17}$ of the money.

Write the ratio of the money that Siobhan receives to the money that Iwan receives.

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

The reversed ratio was more common than the correct answer of 6 : 11. Many candidates used the numbers from the fraction $\frac{11}{17}$, providing an answer of 11 : 17.

Question 10(a)(i)

10 (a) This Venn diagram shows the number of students in a Year 10 tutor group who study History (H) and Geography (G).

There are 29 students in the tutor group.

(i) How many students in the tutor group do not study History or Geography?

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

This was mostly answered correctly except where there were errors in arithmetic. For some candidates the error was in adding before the subtraction. For others the subtraction 29 – 27 led to 3 as an answer. Candidates who showed a correct method with arithmetic errors gained M1. A few errors came from not including the value in the overlap.

Question 10(a)(ii)

(ii) How many students in the tutor group study History?

(ii)   .... **[1]**

If not correct, candidates answered 13 as they had misunderstood the Venn diagram and not added the 5 candidates in the intersection representing those studying history and geography.
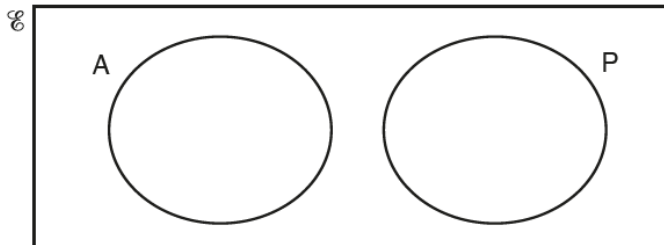
Question 10(a)(iii)

(iii)   One of the 29 students is selected at random.
What is the probability that they study Geography but do not study History?

(iii)   .... **[1]**

Errors came from a denominator of 27 omitting the candidates that studied neither subject. Other candidates gave an incorrect numerator of 14 from including candidates that studied both subjects. A few candidates wrote 'likely' or 'unlikely'.

Question 10(b)

(b)   This diagram represents students in a tutor group who study Art (A) and Physics (P).

How many students study both Art and Physics?

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

Most candidates correctly answered 0 or stated 'none'. Some were confused by the lack of numbers on the diagram but the fact the circles do not intercept indicates there are no candidates who study both Art and Physics.

Question 11(a)

11 (a) Liu has a bag only containing red grapes and green grapes.

$\dfrac{4}{9}$ of the grapes are red.

If there are 8 red grapes in the bag, how many grapes are green?

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

Candidates found this challenging and many did not link the fraction to the 8 given. A method mark was earned for indicating that $\dfrac{5}{9}$ of grapes were green or identifying that $\dfrac{8}{18}$ of grapes were red, often this led to an answer of 18 rather than 10. Others identified the required multiplier of 2 but could get no further.

Question 11(b)

(b) Sophia has a different bag only containing red grapes and green grapes.

The number of grapes in her bag is different, but $\frac{4}{9}$ of the grapes are also red.

She picks out a red grape from her bag and eats it.

$\frac{3}{7}$ of the remaining grapes in her bag are red.

How many of the remaining grapes in her bag are red and how many are green?

(b)   .... red grapes

.... green grapes **[2]**

Candidates found this question extremely difficult. Many stated answers of 3 and 4 hence getting the ratio between the grapes but not identifying the correct number of red grapes and green grapes. Marks credited were generally for finding an equivalent fraction to $\frac{3}{7}$ or $\frac{4}{9}$. Others gave an answer of 3k red grapes and 4k green grapes, mostly 6 and 8.

Question 12(a)

12 **(a)** Multiply out.

$$4c(d - 5)$$

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

Many candidates gained M1 for $4cd$ but a common error was $^-20$ rather than ^-20c. Others only multiplied the first term in the bracket resulting in $4cd - 5$.

Question 12(b)

(b) Multiply out and simplify.

$$(3x + 2)(x - 4)$$

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

Another difficult question for most candidates. Those credited M1 often had a clear method, such as using a grid or FOIL. The most common errors related to dealing with negative terms and incorrect collection of terms. Sometimes the correct four terms were stated but $^-12x + 2x$ became $14x$ or ^-14x. Candidates found it hard to generate ^-12x. Some attempts to multiply out resulted in just $3x^2 - 8$.

Question 12(c)

(c) Solve.

$$3x - 2 \leqslant 22$$

(c) .... **[2]**

Most scoring candidates solved this as a linear equation using the balance method but then did not replace the inequality sign. M1 was commonly gained for 8 or $x = 8$ on the answer line or $3x = 24$ seen in working. Some gave their answer as an embedded expression. Non-scoring attempts saw 22 – 2 rather than 22 + 2 but few could proceed beyond $3x \leq 20$.

Question 13(a)

13 (a) Calculate.

$$\frac{3}{5} + \frac{5}{8}$$

Give your answer as a mixed number in its simplest form.

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

Those candidates who realised they needed a common denominator were often successful. Some stopped at $\frac{49}{40}$, rather than changing this to a mixed number as required by the question, so lost a mark. Some attempts at equivalent fractions produced common denominators but for many there was confusion over which fraction rule applied to which operation. Many candidates just added the numerators and denominators giving an answer of $\frac{8}{13}$.

Question 13(b)

(b) Work out.

$$5 \times 10^4 - 1.6 \times 10^3$$

Give your answer in standard form.

(b) .... **[3]**

There were few fully correct answers, largely due to inconsistent conversion to and from standard form. Many candidates gained a mark for 50 000 but 16 000 was a common error which led to the digits 34. A few achieving 48 400 did not convert back to standard form or made an error in the power of 10.

Question 14

14 Here is the nutritional information for a 110 g serving of cereal.

Carbohydrates 99.4 g
Proteins   9.5 g
Fats   1.1 g

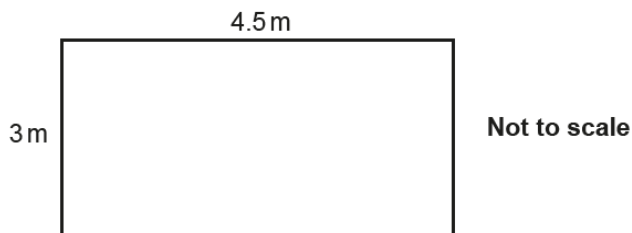Emily says that more than 90% of this serving is carbohydrates.

Is she correct?
Explain your reasoning.

....

.... **[3]**

The favoured correct response was finding 90% of 110, commonly seen as 10% of 110 = 11 so 90% = 99, then arguing that 99.4 was more than 99. After correct calculations, a few candidates concluded that Emily was wrong because 99.4 is bigger than 90%. Some wrote $\dfrac{99.4}{110}$ but could not evaluate it. Incorrect responses provided little or no supporting calculations for the conclusions. Some candidates just compared 90% and 99.4, or added proteins and fats then compared 10.6 and 10%, showing confusion between grams and percentage. It was not uncommon to see $\dfrac{99.4}{100}$ instead of $\dfrac{99.4}{110}$. Many added the components together, often making arithmetic errors, ignoring that 110 g was stated in the question.

Question 15

15   Here is the floor plan of a rectangular room.

4.5 m

3 m   **Not to scale**

Tim buys carpet tiles for this room.

Each tile is a square measuring 50 cm by 50 cm.
The tiles are only sold in packs of ten.
Each pack costs £20.
Tim pays for fitting at a rate of £7.50 per square metre, with any fraction of a square metre rounded up.

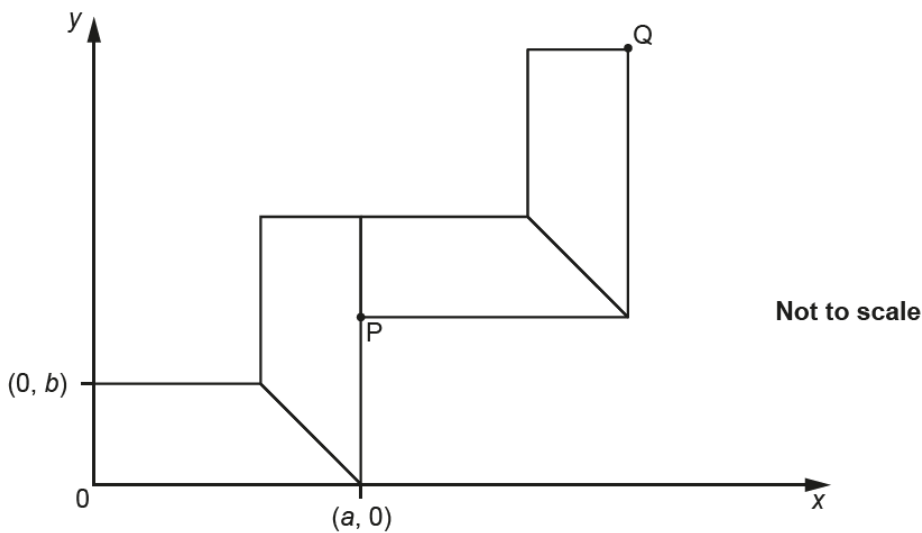Work out the **total** cost of the tiles and fitting.

£ .... **[6]**

Few candidates set out their answer to this multi-stage question clearly, and information given in the question was often overlooked or unused. Most marks credited were for attempts to calculate the floor area and the area of a tile. A few candidates attempted to just count the tiles on each side and multiply to get 54. Some found 6 and 9 but added to give 15. Often a third mark was gained for giving the correct cost for their number of packs. Errors in working arose from:

- Many arithmetic errors.
- Difficulty in converting units.
- Confusion between area and perimeter.
- When calculating fitting cost, many attempted 13.5 × £7.50 which was time consuming.
- Confusing the cost of tiles as being for 1 tile or 1 square metre rather than a pack of 10.

Question 16(a)

16   Four identical trapeziums are placed on a coordinate grid as shown.

Not to scale

(a)   Write down algebraic expressions for the coordinates of point P.

(a)   (........................ , ...)   [2]

This question was found to be too challenging for most and a high number of candidates did not attempt it. A few candidates correctly stated 'a' as the x coordinate and a common answer was (a, 0). Other incorrect responses included (a, b) and (a,0, b,0). The answer called for algebraic terms but many gave numerical values.

Question 16(b)

(b) The coordinates of point Q are (16, 13).
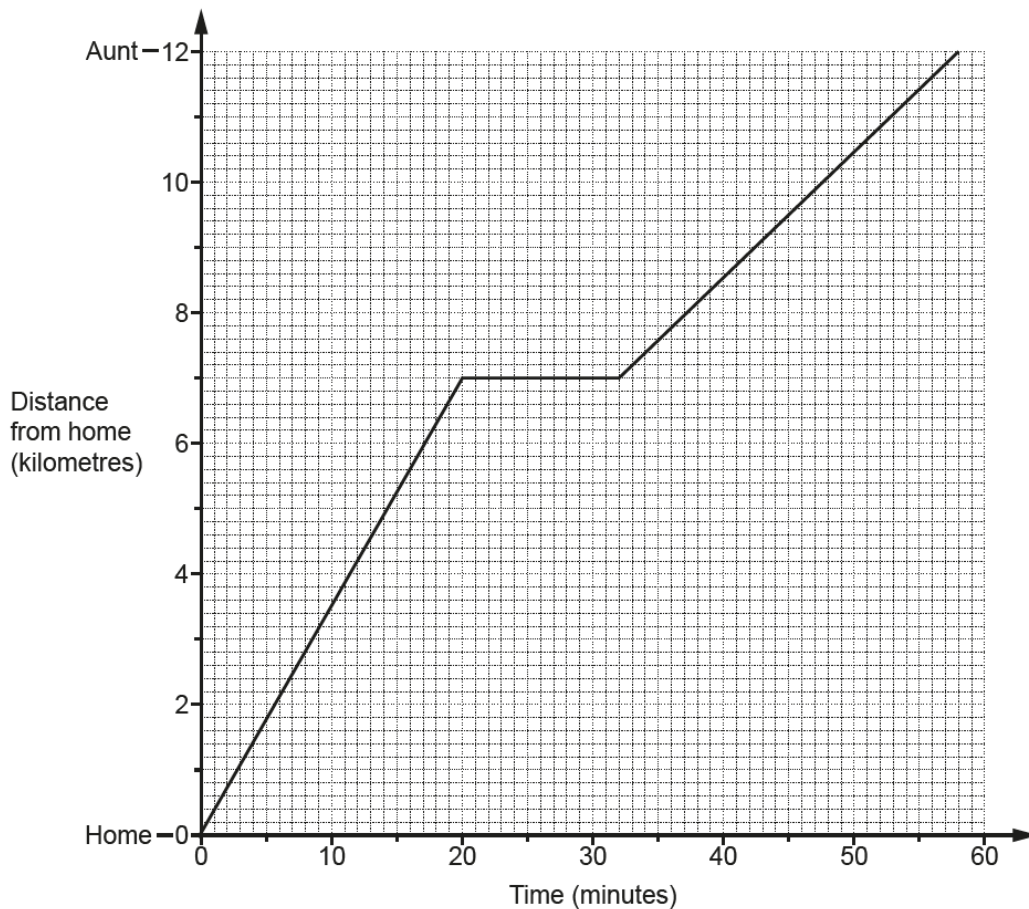
Work out the value of *a* and the value of *b*.

(b)   *a* = ...

     b = ... **[4]**

The mix of geometry and algebra was too difficult for most candidates and many left the response space blank. There was little evidence of algebra to find either *a* or *b*, although some candidates realising that *a* = 16 ÷ 2, gave the correct answer of 8 for *a*. Finding *b* was far less successful; common incorrect methods included dividing 13 by either 2 to get 6.5 or by 4 to get 3.25. Other candidates just stated *a* = 16 and *b* = 13.

Question 17(a)

17 Viraj cycled from his home to visit his aunt.
    He drew this graph to show his journey.
    He stopped at a shop 7 km from his home.

(a) State one assumption that Viraj made when he drew his graph.

....

.... [1]

Scoring candidates appreciated the significance of the straight lines and gained the mark for referring to travelling at constant speed. The mark was lost by a few for implying the whole journey. Non-scoring answers referred to the nature of the journey such as 'he stopped' or the time he took. Some appeared to be under the impression that the graph was drawn prior to the journey and not afterwards.

Question 17(b)

(b) For how long did Viraj stop at the shop?

(b)   .... minutes [1]

10 was a common wrong answer due to inaccurate graph reading.

Question 17(c)

(c) Work out Viraj's average speed between his home and the shop.
Give your answer in metres per minute.

(c) .... metres per minute **[3]**

The units of metres per minute were not noted by most so $\frac{7}{20}$ was commonly seen; however, many candidates reversed the division. Of the very few attempts to convert 7 km it was more often changed to 700 m but these candidates gained the method mark for division by 20.

Question 17(d)

(d) How can you tell, without doing any calculations, that Viraj's average speed between his home and the shop is greater than his average speed between the shop and his aunt?

....

.... **[1]**

Scoring candidates made good use of suitable vocabulary ie steeper slope/gradient/incline, non-scoring responses referred to either the length of the journeys or the time taken when they needed to refer to both. For some the difficulty with mathematical language led to descriptions such as 'more slanted' or 'more vertical'.

Question 18(a)

18 The table shows the relative frequencies of the results for a football team after a number of games.

Result of game	won	lost	drew
Relative frequency	0.2	0.45	

(a) Complete the table. **[2]**

Many candidates demonstrated understanding that probability totals to 1 but poor arithmetic skills in adding and subtracting decimals affected some. A common error was 0.45 + 0.2 = 0.47 and then 1 − 0.47 = 0.53 so just M1 was scored.

Question 18(b)

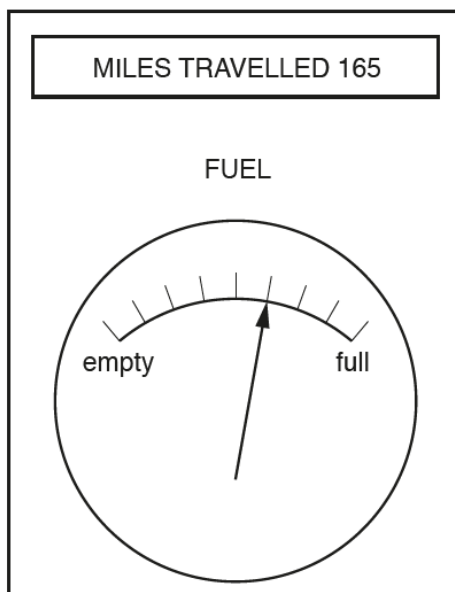**(b)** The team lost 10 more games than they won.

How many games did the team play altogether?

(b) .... **[3]**

Candidates found this part far more difficult. Very few realised that subtracting the relevant relative frequencies was the first step, so it was rare for 0.45 – 0.20 to be linked with 10. A common misconception was to link 0.45 with 10. Other calculations given used the 0.35 that had just been calculated in part (a).

Question 19(a)

19 Ifsaw noticed this information on her car's dashboard at the end of her journey.
She started her journey with a full tank of fuel and her miles travelled set to zero.

(a) Work out how far Ifsaw's car can travel on a full tank of fuel.

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

A vast majority of candidates counted 4 lines instead of 3 intervals so $\dfrac{165}{4} \times 9$ was a very common error as they also used 9 instead of 8 for the whole tank. Some who reached 55 multiplied by 5 finding the fuel left in the tank rather than the full tank. Others attempted to count up in multiples of 165 but usually struggled to work out the correct fraction of 165 to add to 330.
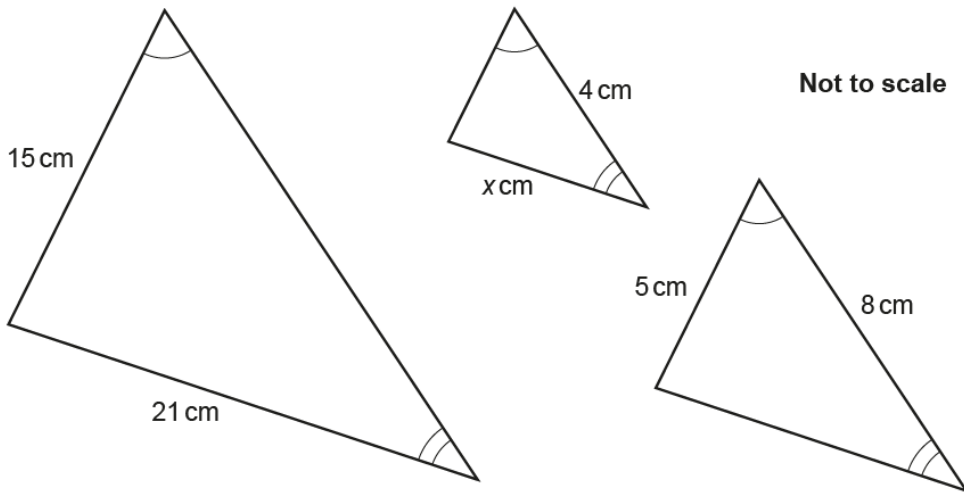
Question 19(b)

(b) What assumption have you made when answering part **(a)**?

....

.... **[1]**

Many successful statements referred to constant speed or that fuel was used at a constant rate. Most non-scoring statements, as with part (a), referred to the lines on the dial rather than bars/gaps. Some thought the question was asking how they had calculated part (a) and gave a description of their method.

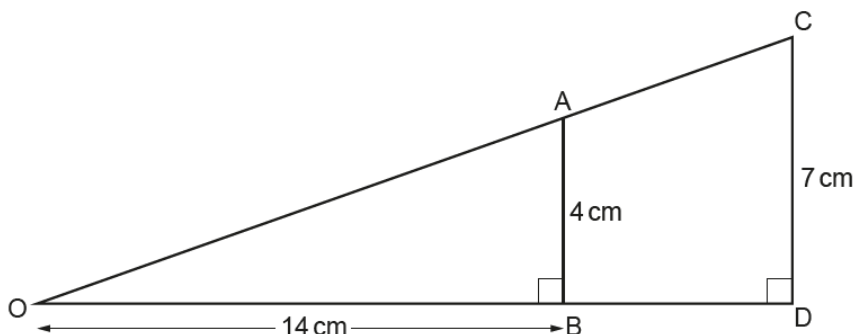# Question 20(a)

20 **(a)** Here are three similar triangles.

Work out the value of *x*.

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

Many candidates did not recognise this as a similar triangle problem; some offered solutions involving Pythagoras' theorem or even trigonometry. Scoring candidates were able to calculate correctly from one triangle to another but were often not able to connect to the third triangle. When M1 was credited it was mostly for either 7 correctly placed on the medium-sized triangle or 2.5 on the small triangle. Others who recognised multipliers linking triangles struggled to use them to find *x*.

Question 20(b)

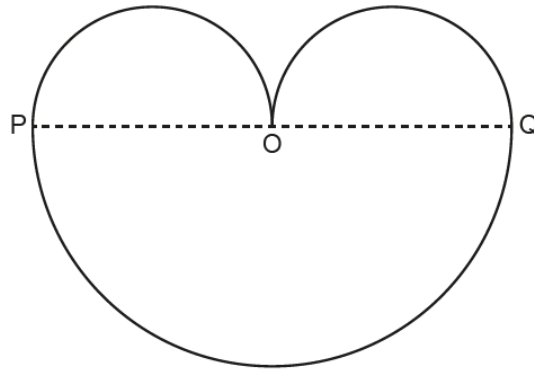(b) The diagram shows two right-angled triangles, OAB and OCD.

Work out the length of BD.

(b) .... cm **[3]**

Many candidates did not appreciate that these were similar triangles, even those who had successfully used similar triangles in part (a). More tried Pythagoras for this part than part (a) and attempts at areas were common. Other incorrect methods seen included assuming AB = BD, measuring BD leading to an answer of 3.5, $\dfrac{14}{7} = 2$ so OD = 28 and simply 7 − 4 = 3.

Question 21

21 This shape consists of three semicircles.

OP = OQ.
The length of PQ is $4x$ cm.

Show that the area, in cm^2, of the whole shape is $3\pi x^2$.   **[5]**

This question proved inaccessible to almost all candidates. In many cases, the question was not attempted. Some gained a mark for a correct radius, often seen on the diagram. Other attempts ignored the algebraic components, providing calculations with numerical values only. Sometimes efforts to bring x in at the end were seen. The few who knew the formula for the area of a circle made errors with the large semicircle due to a lack of brackets. $\pi(2x)^2$ was usually just $\pi 2x^2$. It was quite common from this point for the given answer to be obtained from 'fudged' working.

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Active Results offers a unique perspective on results data and greater opportunities to understand students' performance.

It allows you to:

- Review reports on the **performance of individual candidates**, cohorts of students and whole centres

- **Analyse results** at question and/or topic level

- **Compare your centre** with OCR national averages or similar OCR centres.

- Identify areas of the curriculum where students excel or struggle and help **pinpoint strengths and weaknesses** of students and teaching departments.

http://www.ocr.org.uk/administration/support-and-tools/active-results/

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