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Examiners' report

A LEVEL

MATHEMATICS B (MEI)

OCR Level 3 Advanced GCE in Mathematics B (MEI)

H640

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Contents

Introduction 4
Paper 1 series overview 5
Section A overview 6
  Question 1 (a) 6
  Question 1 (b) 6
  Question 2 7
  Question 3 (a) and (b) 7
  Question 3 (c) 7
  Question 4 8
  Question 5 9
Section B overview 10
  Question 6 (a) 10
  Question 6 (b) 11
  Question 6 (c) 11
  Question 7 12
  Question 8 (a) 12
  Question 8 (b) 13
  Question 9 (a) 13
  Question 9 (b) 14
  Question 9 (c) 14
  Question 10 (a) 15
  Question 10 (b) 15
  Question 10 (c) 15
  Question 10 (d) 16
  Question 11 (a) 17
  Question 11 (b) 18
  Question 11 (c) 18
  Question 12 (a) 18
  Question 12 (b) 19
  Question 12 (c) 19
  Question 13 (a) 20
  Question 13 (b) 20
  Question 13 (c) 20
  Question 13 (d) 21

Question 14 (a) 21
Question 14 (b) 22
Question 14 (c) 23

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. A selection of candidate responses is also provided. 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 and the mark scheme can be downloaded from Teach Cambridge.

Paper 1 series overview

This was an accessible paper, and most candidates performed well on both Pure questions and Mechanics questions. Questions involving differentiation and integration appeared to be consistently answered well as was the handling of connected particles (Question 6). Questions involving vectors (Question 13 and Question 14 (a)) proved to be challenging for many candidates sitting this paper.

Section A (Questions 1 – 5) is designed to offer a gentle start to the exam, with questions focused on routine procedural work and minimal problem solving and interpretation. However, these questions are not limited to the AS/Stage 1 content, with some incomplete attempts seen at manipulating partial fractions (Question 2) and solving modulus equations (Question 1 (b)) from content in the stage 2 column.

Section B (Questions 6 – 14) is designed to include longer questions with some involving more complex problem solving and are often more scaffolded through multiple question parts.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
• gave well ordered and efficient responses • were confident in all or most of the syllabus • recognised the need to justify answers with clear working when required • were confident in the use of vectors in solutions.	• chose inefficient or incomplete methods for problem solving • struggled to apply knowledge of mechanics and logs in less routine contexts • skipped critical stages in their reasoning/working in questions where command words indicated it was required for full credit • struggled with mathematical notation particularly vectors.

Section A overview

Not all candidates that scored highly in Section B performed equally well on all the questions in Section A. Question 4 proved surprisingly challenging for some candidates that tackled the majority of the paper very well overall.

Question 1 (a)

1 **(a)** Sketch the function $y = |2x - 3|$. **[2]**

Questions such as this are looking for the general shape, the vertex correctly labelled on the x-axis and the y-intercept labelled. Most candidates had a V-shaped graph and full marks awarded where the vertex and y-intercept were clearly labelled.

The modulus function is defined for all values of x but some candidates only had the graph drawn for positive values of x and so did not gain a mark.

Assessment for learning

The command word 'sketch' requires a clearly annotated diagram indicating the main features of the graph. These are likely to include at least some of the following:

- turning points
- asymptotes
- intersection with the *y*-axis
- intersection with the *x*-axis
- behaviour for large *x* (+ or -)

Question 1 (b)

(b) **In this question you must show detailed reasoning.**

Solve the equation $|2x - 3| = 4 - x$. **[3]**

Most candidates worked with two linear equations and were successful in finding two roots. Often there were errors in the negative of one of the equations to set up the second equation. Some candidates were successful after squaring both sides and working with the resulting quadratic equation.

Question 2

2 Express $\dfrac{7x-25}{(x-1)(x-4)^2}$ in partial fractions. **[4]**

There was a full range of marks seen here. The substitution method proved to be the more successful approach whereas the equating coefficients would lead to simultaneous equations (usually 3 of them) which were tricky to solve. Common errors were to omit one of the terms in the setup line, or to use a linear numerator with the repeated linear factor denominator. The special case (SC) details that where this two term solution was completed correctly then this was given 3 out of 4 marks.

Question 3 (a) and (b)

3 **(a)** Evaluate

$$\sum_{r=1}^{4} \frac{1}{r}$$

giving your answer as a fraction in its lowest terms. **[1]**

(b) Write the sum $1+3+5+7+9$ in a similar way to the series in part **(a)**. **[2]**

Most candidates seemed to understand sigma notation and find the correct value for part (a). Most realised the need for a formula to generate the odd numbers for part (b), usually $(2r \pm 1)$ which was enough for the method mark. The A mark was only given where the brackets were used, the formula simplified and the dummy variable matched the one used in the limits (either $\sum_{r=0}^{4}(2r+1)$ or $\sum_{r=1}^{5}(2r-1)$).

Misconception

? The term to term $+2$ rule for this sequence is not the r^{th} term needed in this formula.

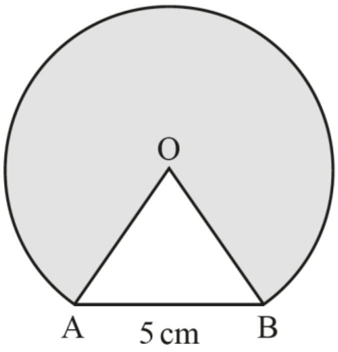
Question 3 (c)

(c) Explain why the sum to infinity of $1+3+5+7+9+\ldots$ is **not** well defined. **[1]**

More successful candidates indicated that the sequence being generated was divergent – or not convergent. Less successful responses were less clear on what was divergent or referred to the sequence not being geometric. Simply stating that we cannot sum to infinity an arithmetic sequence is insufficient: it does not explain why.

Question 4

4 The diagram shows part of a circle with centre O and radius 5 cm. The circle passes through the points A and B. The length AB is 5 cm.



Calculate the area of the shaded region. **[4]**

Surprisingly many candidates were confused in this question by the triangle. Those who recognised the triangle was equilateral were able to write down the angle at the centre of the circle straight away, but many candidates had to spend time calculating AOB using the cosine rule. Some candidates subtracted the area of the triangle rather than the area of the missing sector from the area of the complete circle.

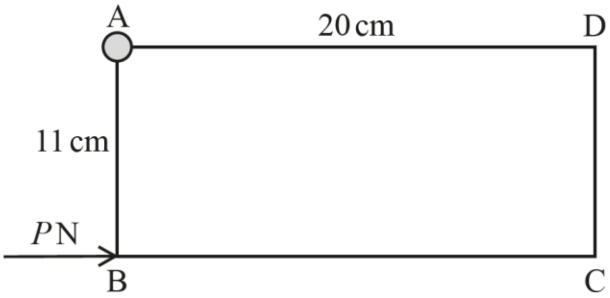
The simplest way to solve this problem was to realise that the shaded area is $\frac{5}{6}$ of the area of the circle and calculate the area of the major sector.

Question 5

5 A uniform rectangular lamina ABCD has a mass of 0.12 kg. Length AB is 11 cm and length AD is 20 cm.

The lamina ABCD is held by a smooth hinge at A.

A horizontal force of magnitude P N is applied at B so that the lamina is in equilibrium in a vertical plane with AD horizontal as shown in the diagram.



Show that P is 1.07 to **3** significant figures. **[3]**

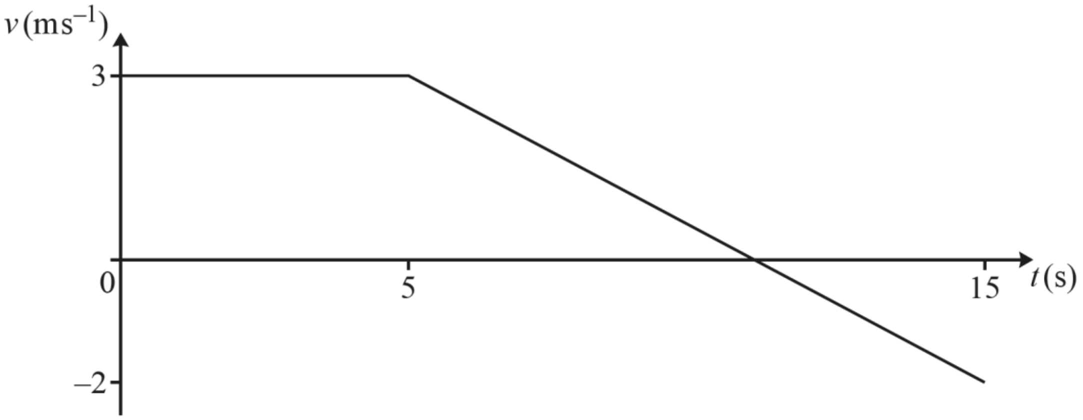
Generally this question was well done, with candidates making it clear they were equating a clockwise and an anticlockwise moment. Very few candidates used the diagonal distance from point A to the centre of mass for the moment of the weight.

Section B overview

Section B questions require more in the way of understanding a context or problem solving. Some candidates who had struggled with Section A found some of these questions more familiar and demonstrated the preparation they had done for the exam. Some applied their learnt techniques where they were not relevant, particularly in the projectile question (Question 12).

Question 6 (a)

6 A car is travelling along a straight horizontal road. The car's velocity $v\,\mathrm{m\,s^{-1}}$ at time t s is shown in the velocity-time graph below. The points (0, 3) and (5, 3) are joined with a line segment, and the points (5, 3) and (15, −2) are joined with another line segment.

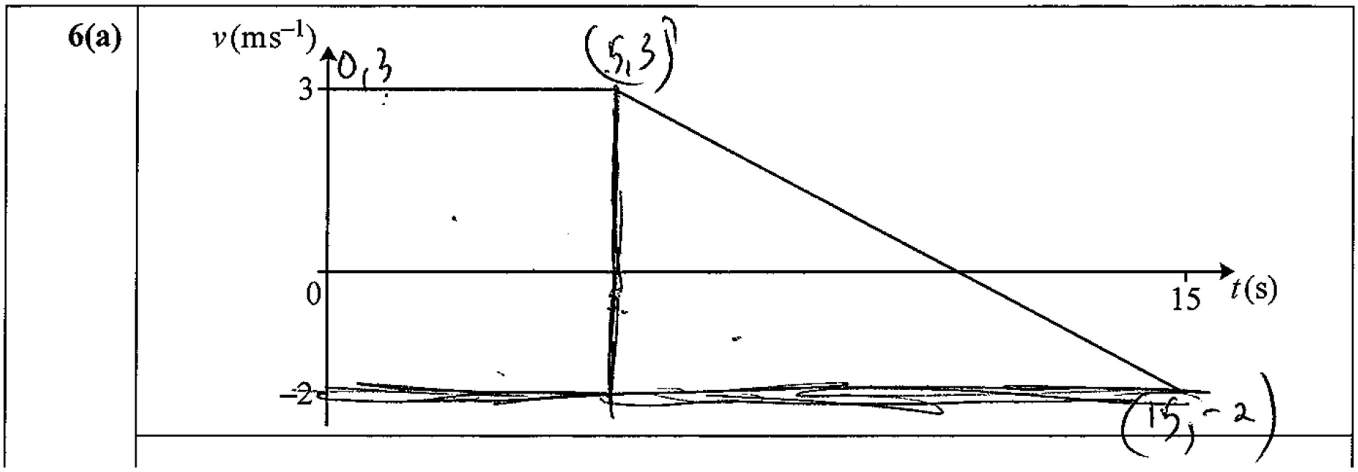


(a) Calculate the total distance travelled by the car in the first 15 s. **[3]**

The question was testing an understanding of the distinction between distance and displacement, so to obtain full marks, candidates needed to recognise the change in direction and use the modulus of the areas between the graph and the x-axis. The most efficient method to find that $v = 0$ at $t = 11$ is by similar triangles. The majority found the equation of the sloping line and solved for $v = 0$, or used $suvat$ with a combination of $u = 3, v = -2, t = 10$ and $a = -0.5$.

Some candidates found the area of a triangle which did not represent distance travelled.

Exemplar 1



In this exemplar, the area of the triangle found does not represent displacement or distance and so was given no marks. This type of response was surprisingly common.

Question 6 (b)

The car is then attached to a caravan by means of a light inextensible horizontal tow bar and continues travelling along the road. You are given the following information.

- The car and caravan accelerate at $1.5\,\mathrm{m\,s^{-2}}$.
- The mass of the car is 1400 kg and the mass of the caravan is 900 kg.
- The driving force acting on the car is D N and the tension in the tow bar is T N.
- The resistances to motion acting on the car and caravan are 400 N and 450 N respectively.

(b) Write down the equations of motion for the car and the caravan separately. **[2]**

This was generally done well. Common errors were to omit the tension between the car and the caravan in the equation for the car. A few candidates used weight rather than mass in their equations.

Question 6 (c)

(c) Calculate the values of D and T. **[3]**

Most candidates solved their simultaneous equations from part (b) – largely with success. It was pleasing to see, in a few responses, the whole system being considered to find D. This was useful also as a restart for those who omitted T in their equation for the car in (b).

Question 7

7 In this question you must show detailed reasoning.

Show that the area of the finite region enclosed by the curves $y = x^2 - 7x + 2$ and $y = 14 - 9x - x^2$ is $\frac{125}{3}$. **[7]**

This question had the '**In this question you must show detailed reasoning**' so candidates were expected to provide sufficient detailed reasoning in the form of a full mathematical argument that justifies each step of their solution. Almost all candidates correctly found the limits required to calculate the area, with only a small proportion not showing sufficient written working for solving the quadratic equation. Some candidates found two separate areas and subtracted to find the given answer, whilst others integrated the difference between the functions $12 - 2x - 2x^2$ to obtain the given answer. Of those candidates that integrated $-12 + 2x + 2x^2$ to give the negative of the given answer, some that then just ignored the negative did not gain the final accuracy mark (any acknowledgement of why the area cannot be negative was given the mark). Some candidates did not show the use of the limits in as much detail as required for a detailed reasoning question.

Assessment for learning

The '**In this question you must show detailed reasoning'** is not a '*do not use a calculator*' instruction. There is no prohibition on using the quadratic solve function to help apply the factor theorem, or performing the arithmetic required to calculate a definite integral. However, candidates should expect to show sufficient working to demonstrate that they understand the mathematical concepts that the technology is supporting them with.

Question 8 (a)

8 (a) Determine the **two** values of k for which the line $y = 3x + 5$ is a tangent to the curve $y = k - kx - x^2$. **[4]**

The simple and effective way was to equate the two equations and set the discriminant to 0. Some errors were made in rearranging the quadratic to equal zero, but most candidates could then establish the correct values of 'a', 'b' and 'c'. Many candidates correctly set the derivative of the curve equal to 3 to give $-k - 2x = 3$ but this is not sufficient to solve the problem. Candidates still needed to equate the equation of the curve with that of the line to obtain a second equation. The resulting algebra is much more complicated than the discriminant method and it was pleasing to see a lot of candidates work it through to the end.

Question 8 (b)

(b) These values of k are used to define two curves of the form $y = k - kx - x^2$.

Determine the coordinates of the point of intersection of these two curves. **[3]**

Many candidates who obtained integer values for k in part (a) were able to complete this. The point $(-1,1)$ lies on the curve $y = k - kx - x^2$ for all values of k so the correct answer is obtained for any pair of values found in part (a).

Question 9 (a)

9 The table below shows information about four of the moons of the planet Jupiter. The semi-major axis is the greatest distance that each moon reaches from the centre of its orbit around Jupiter. The orbital period is the time in Earth days that it takes to orbit the planet.

Moon	**Semi-major axis (km)**	**Orbital period (Earth days)**
Io	421 800	1.7627
Europa	671 100	3.5255
Ganymede	1 070 400	7.1556
Callisto	1 882 700	16.690

A student uses the equation $T = kd^n$ to model the orbital period of Jupiter's moons, where T is the orbital period in Earth days, d is the semi-major axis in km, and k and n are constants.

(a) Show that the equation $T = kd^n$ can be rewritten in the form $\log_{10} T = \log_{10} k + n\log_{10} d$. **[1]**

Most candidates demonstrated confidence in dealing with logs, and in their application to this situation. Most candidates were aware of the need to deal with the multiplication as a first stage, and then the power. A few misinterpreted the model and dealt with the power first.

Question 9 (b)

The student uses graph drawing software to plot $\log_{10} T$ against $\log_{10} d$. They find that the line of best fit for the data has gradient 1.504 and intercepts the $\log_{10} T$ axis at -8.215.

(b) Determine values of k and n that are consistent with this information. **[3]**

Candidates generally understood how the gradient and intercept given related to the result in the previous part. Many elected to give the result for k in a power of 10 which was acceptable. A minority used data points from the table to find n and k with varying success but even when successful it did not get full credit as the values given in the question use all the data points not just 2.

Question 9 (c)

The student uses their equation to predict the orbital period for another moon of Jupiter called Thebe which has a semi-major axis of 221 900 km. They look up the value in an online encyclopedia and find it is 0.6761 Earth days.

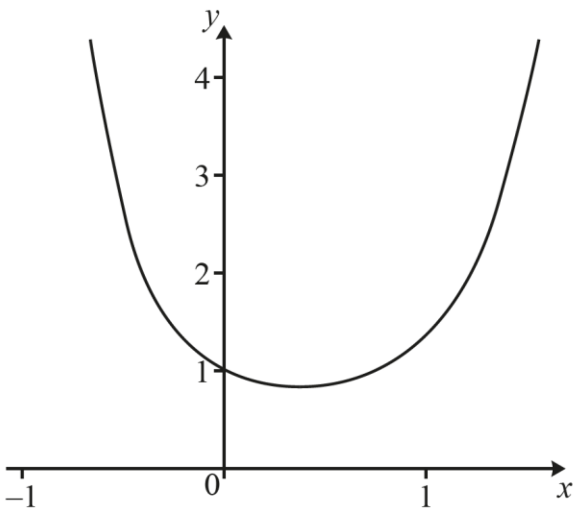
(c) Comment on the suitability of the student's equation to model the orbital period of Thebe. **[2]**

Most candidates chose to substitute the semi-major axis into the exponential form of the model and generated a correct result for the orbital period (for their values obtained in the previous part). Some used the model to predict log T. Final marks were often lost because candidates expected the results to be identical, demonstrating that they did not fully understand the concept of modelling.

Some candidates noticed that the data for Thebe sits outside the range of values given for the other moons on the table in the question and so rejected the model for Thebe as it required extrapolation. This is a valid point but does not fully answer the question, as the model is suitable anyway. Special Case B1 was awarded for this where it appeared without any other working.

Question 10 (a)

10 The diagram shows part of the graph of the function $y = \frac{e^{x^2}}{x+1}$ which is defined for $x > -1$.



(a) Find an expression for $\frac{dy}{dx}$. **[3]**

Many correct responses were seen from candidates using the quotient rule or the product rule with $(x+1)^{-1}$. There was a significant minority that struggled with correctly differentiating e^{x^2} .

Question 10 (b)

(b) Determine the range of values of x where the gradient of the function is negative. **[3]**

Candidates were awarded the method mark here for attempting to solve their $\frac{dy}{dx} < 0$. Where $\frac{dy}{dx} = 0$ was used, the method was only awarded when their root was used to form an inequality. Most candidates did not use the correct lower limit $-1 < x$ which was part of the definition of the function so did not gain the final mark.

Question 10 (c)

(c) Use the trapezium rule with 4 strips to estimate the area of the region bounded by the curve, the axes and the line $x = 1$. **[3]**

This question was generally well done. Where the correct answer was not obtained, it was usually arithmetical errors in finding or using the y-values needed in this question. The method mark was not given unless all the y-values were included in the calculation.

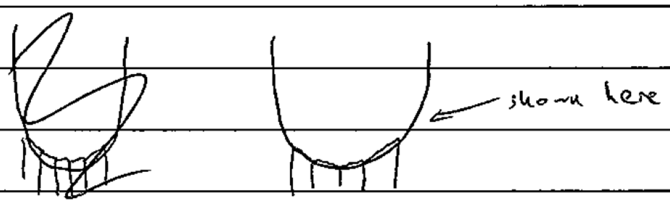
Question 10 (d)

(d) Determine whether the estimate in part **(c)** is an under- or over-estimate. Give a reason for your answer. **[1]**

We needed to see the word over-estimate and a reason to award this mark. 'Concave upwards' is in the specification but equivalent expressions were allowed here.

Exemplar 2

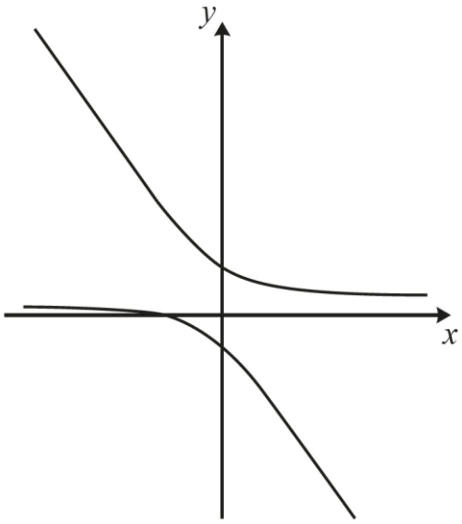
10(d) ~~-under~~ - overestimation as the graph curve is concave upwards and thus each trapezium will have a small area above the ~~a~~ curve



This response shows the value of a diagram to explain your ideas.

Question 11 (a)

11 The curve in the graph below is defined implicitly by $(2x+y)(y-1)=6$.



(a) Show that $\dfrac{dy}{dx}=\dfrac{2(1-y)}{2y+2x-1}$. **[4]**

Implicit differentiation seemed to be well-practiced with most candidates able to deal with the 'y' and 'y^2' terms in the expanded expression (more popular approach). The product '$2xy$' became a stumbling block for some. However, a good proportion of the candidates did not deal properly with the differentiation of the '6' with most omitting the '$=0$' at some point.

Some candidates appeared to work backwards from the given answer, but they needed to have a convincing argument to obtain full marks.

Assessment for learning

Candidates needed to convince the examiner they had a complete argument. In this question it was really helpful when candidates bracketed the two terms obtained as the derivative of $2xy$, or used the phrase 'product rule' or showed the working where the product rule is used.

Question 11 (b)

(b) Find the equation of the normal to the curve at the point (2, 2). **[3]**

Candidates could use the given formula for the gradient to obtain a value for the gradient at the point $(2,2)$. Some went on to find the equation of the tangent rather than the normal. A mark was given if candidates found the negative reciprocal of the expression for $\frac{\mathrm{d}y}{\mathrm{d}x}$ rather than a numerical value.

Misconception

The gradient used in the equation of a normal must be a numerical value and not an expression in x and y.

Question 11 (c)

(c) Show that there is **no** point on the curve at which the tangent is parallel to the x-axis. **[3]**

Many candidates understood they had to set $\frac{dy}{dx}$ to zero and solve giving $y = 1$. Most then went on to realise this gives a contradiction as no x-value could be found. Many explained this in terms of $0 \neq 6$ which was acceptable. A minority of candidates tried to find points at which the denominator of the expression for $\frac{\mathrm{d}y}{\mathrm{d}x}$ was zero.

Question 12 (a)

12 In this question x and y are the horizontal and upwards vertical directions respectively.

An astronaut is standing on the surface of the moon exploring the motion of a ball.

(a) The astronaut drops a ball from rest from 1 m above the surface. It takes 1.1 s to hit the surface.

Calculate the value of the acceleration due to the moon's gravity. Give your answer correct to **3** significant figures. **[2]**

This was very well done. We accepted either up or down to be the positive direction, so accepted the values 1.65 or -1.65 from correct working. Some candidates did not gain a mark when they did not round their answer to 3 significant figures.

Question 12 (b)

The astronaut stands in a crater of the moon and hits the ball with a golf club from the moon's surface. The initial velocity of the ball is $25\,\mathrm{m\,s^{-1}}$ at an angle of $40°$ above the horizontal in the x-direction.

(b) Taking the origin to be the point of projection, determine the equation of the trajectory of the ball. Give your answer in the form $y = \mathrm{f}(x)$, with each of the coefficients correct to **3** significant figures. **[4]**

Most candidates were successful in finding x in terms of t. In finding y in terms of t, those who assumed downwards as positive in part (a) mostly recognised that they needed to change the sign of their acceleration. A disappointing number used $a = \pm 9.8$ and so did not gain the method mark. Others used the wrong sign for acceleration which was not penalised at this stage.

Misconception

?

Some candidates misunderstood what was required for the equation of the trajectory (specification My4), so found the range and the greatest height of the golf ball instead. This was quite a lot of work but could not be awarded any credit.

Question 12 (c)

(c) The edge of the crater is 40 m away from the point of projection and 15 m above it.

Determine whether the ball goes over the crater's edge. **[2]**

The expected answer here involved substituting $x = 40$ into the equation of the trajectory and comparing with the height of the crater and most candidates were able to attempt this. The question was not sufficiently clear that the 40m was a horizontal distance, so a small number of candidates took 40m to be the oblique distance to the edge of the crater and so used $x = 5\sqrt{55}$. This was given full credit.

A good number of candidates who had struggled with part (b) were able to tackle this question by finding the time to travel 40m horizontally or the times at which the golf ball was 15m above the surface. They needed to also work out a vertical or horizontal distance to achieve the method mark.

Question 13 (a)

13 The displacement $\mathbf{r}$ m of a parachutist t s after opening their parachute is modelled by

$$\mathbf{r} = \begin{pmatrix} 50t \\ 280 + 5t - 280e^{-0.16t} \end{pmatrix}$$

where the x-direction is horizontal and the y-direction is vertically **downwards**.

(a) Calculate the **distance** from the parachutist's initial position that the model predicts after 10 s. **[3]**

This question was well done, and most candidates understood the need to substitute $t = 10$ into the vector expression and find the modulus of the answer. Some candidates also checked that the starting position was the origin, but this was not required.

Question 13 (b)

(b) Find a vector expression for the velocity of the parachutist according to the model. **[3]**

Most candidates dealt successfully with the vector notation and the differentiation of the exponential function. There were some errors with signs. A small number of candidates integrated instead of differentiating. For full credit the answer had to be in vector form.

Question 13 (c)

(c) Determine what velocity the model predicts for large values of t. **[2]**

Many fully correct answers were seen. Some candidates just looked in the vertical direction and the value 5 was given credit if it was clear that it was a vertical component. This question was designed to test an understanding that velocity is a vector quantity so where the final answer was speed, the magnitude of the velocity vector, then only 1 mark out of 2 was given.

Question 13 (d)

(d) Parachutists usually land travelling approximately vertically.

Explain a factor that should be included in the model to better reflect this. **[1]**

Many candidates just wrote 'air resistance' for their answer, not realising that air resistance had been taken into account in the model in the vertical direction. To obtain the mark here, the response had to include an indication that air resistance acted in the horizontal direction as well.

A small number of candidates read the word 'factor' in the question to mean a multiplicative term in the expression for horizontal velocity, so a Special Case mark was given for candidates who discussed the inclusion of $a\mathrm{e}^{-kt}$, similar to that in the vertical component.

Question 14 (a)

14 In this question the **i** and **j** vectors are horizontal and vertically upward respectively.

A particle of mass 5 kg is at rest on a rough horizontal shelf. The coefficient of friction between the particle and the shelf is μ.

(a) A force $\mathbf{P} = 9\mathbf{i} + 20\mathbf{j}$ N acts on the particle. The particle is on the point of sliding along the shelf.

Determine the value of μ. **[5]**

Candidates who could interpret the vector information were able to answer this efficiently, and many scored full marks here. It was very common to see responses where the normal reaction was equal to the weight of the object and also common to see the magnitude of the force P used as the value of the friction force. Sometimes μ was given as a vector, showing a lack of understanding of the coefficient of friction.

Misconception

?

The normal reaction between an object and a surface is not always equal to the weight. Where there are other forces with a vertical component, the normal reaction changes.

In this question, a diagram showing the 9 horizontally and the 20 vertically is a big help to getting this question right.

Question 14 (b)

The force **P** is removed. One end of the shelf is lifted so that it is inclined at $\alpha°$ to the horizontal.

(b) The particle is on the point of sliding **down** the shelf.

Show that $\alpha = 17.2$ to **3** significant figures. **[4]**

The answer is given in this question, so we expected candidates to explain their working. We insisted on seeing $R = 5g\cos\alpha$ (or $F = \mu(5g\cos\alpha)$) and many candidates did not gain a mark by not stating this clearly. Candidates could not obtain the given answer unless they had found μ correctly in part (a).

Where a wrong value for μ from (a) was used, candidates realised they should have had $\mu = \tan 17.2$ for part (a) and many went back and put $\mu = 0.31$ in the space for part (a). Unless there was supporting work for this value, it was ignored.

Exemplar 3

14(a)

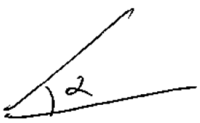
$F = \mu R = \mu(20 + 5g)$

$\mu(-20 \overset{+}{\cancel{\times}} 5g) = 9$

$\mu = \dfrac{9}{-20 \overset{+}{\cancel{\times}} 5 \times 9.8} = \cancel{0.4304}$

$0,3103$

14(b)



$5g\cos\alpha\,\mu = 5g\sin\alpha$

$\overset{0,3103}{\cancel{0.4304}} = \tan\alpha$

$\alpha = 17,229°$

This exemplar shows a candidate who does not write enough explanation in a 'show that' question. The first B mark is not given here because the value of the normal reaction is only used in the equation and not made explicit. Had the diagram been completed, and the normal reaction labelled as $5g\cos\alpha$, or if $R = 5g\cos\alpha$ been written clearly, then this would have had this mark. The second B mark is given as the scheme allows the mark for $5g\sin\alpha$ embedded in an equation although it would be better to have seen $F = 5g\sin\alpha$. The M marks is awarded when their equation is used to give a value for $\tan\alpha$. It would appear that the candidate then realised they had made a mistake in part (a) as their value did not lead to the given answer so had made a complete correction to the working as well as the final answer there. The final A mark was awarded here as the given answer followed from what is now correct working in parts (a) and (b).

14(a) was awarded full marks.

Question 14 (c)

(c) The particle is projected **up** the shelf with an initial speed of $5\,\mathrm{m\,s^{-1}}$.

Given that the particle remains in contact with the shelf, determine the time after projection at which the particle first comes to rest. **[6]**

This question needed candidates to calculate the acceleration of the particle along the slope using Newton's Second Law. Credit was given for using the friction force and the component of the weight, which in this situation were equal. Candidates then had to use the acceleration to find the time taken to come to rest using a $suvat$ equation and follow through marks were available when the acceleration was not correct.

Some candidates misinterpreted 'projected' and treated it as a projectile.

A few candidates, presumably who had studied Further Maths, used work and energy to find the distance travelled and then used a $suvat$ equation to finish the question. This was an acceptable method but not expected for A level Mathematics.

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Reviews of marking

If any of your students' results are not as expected, you may wish to consider one of our post-results services. For full information about the options available visit the OCR website.

Access to Scripts

We've made it easier for Exams Officers to download copies of your candidates' completed papers or 'scripts'. Your centre can use these scripts to decide whether to request a review of marking and to support teaching and learning.

Our free, on-demand service, Access to Scripts is available via our single sign-on service, My Cambridge. Step-by-step instructions are on our website.

Keep up-to-date

We send a monthly bulletin to tell you about important updates. You can also sign up for your subject specific updates. If you haven't already, sign up here.

OCR Professional Development

Attend one of our popular professional development courses to hear directly from a senior assessor or drop in to a Q&A session. Most of our courses are delivered live via an online platform, so you can attend from any location.

Please find details for all our courses for your subject on **Teach Cambridge**. You'll also find links to our online courses on NEA marking and support.

Signed up for ExamBuilder?

ExamBuilder is the exam paper builder platform for a range of our qualifications. Find out more.

Free for all OCR centres with an Interchange account, it allows unlimited users per centre. We require an Interchange username to verify your centre's users for ExamBuilder.

If you do not have an Interchange account, please contact your centre administrator (usually the Exams Officer) to request a username.

Once you have an Interchange username, use the form on this page to sign up for ExamBuilder, or ask an existing user at your centre to create an ExamBuilder account for you.

Active Results

Review students' exam performance with our free online results analysis tool. It is available for all GCSEs, AS and A Levels and Cambridge Nationals (examined units only).

Find out more.

Tell us what you think

Your feedback plays an important role in how we develop, market, support and resource qualifications now and into the future. We want you and your students to enjoy and get the best out of our qualifications and resources, but to do that we need your honest opinions to tell us whether we're on the right track or not.

You can email your thoughts to resources.feedback@ocr.org.uk or visit our feedback page to learn more about how you can help us improve our resources.

Designing and testing in collaboration with you and your students

Helping young people develop an ethical view of the world

Equality, diversity, inclusion and belonging (EDIB) are part of everything we do

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Contact the team at:

01223 553998

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To stay up to date with all the relevant news about our qualifications, register for email updates at ocr.org.uk/updates

Visit our Online Support Centre at support.ocr.org.uk