

Automated A Level Exams Delivering & Marking Platform

*An intelligent solution for delivering and marking mock
examinations in schools and colleges*

For Teachers: Management & Analytics | For Students: Exams & Feedback



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PROCESSING TIME

10-30

Minutes

SUBJECTS SUPPORTED

STEM+

01

THE EXAM PREPARATION GAP

The Exam Preparation Gap



Limited Practice

Teachers can only assign a handful of mocks per year due to marking workload. Students never get enough exam practice before the real one.



Delayed Feedback

Students wait days or weeks for marked papers, missing the critical window for improvement while errors go uncorrected.



Inconsistent Grading

Human markers vary in standards, leaving students unsure of their true level. Inconsistent feedback hinders progress.

This results in students entering final exams under-prepared and under-confident.

02

THE SOLUTION

The screenshot displays the Cortex user interface for a student named John Smith. The dashboard is organized into several sections:

- Header:** Greeting "Hello, John! 🙌 (Year 13A)" with a sub-header "Let's learn something new today!". It includes a search bar, a notification bell, and a user profile card for John Smith (Year: 13A, john@cortex-global.com).
- Navigation:** A sidebar on the left contains "Dashboard" (selected), "My Subjects", and "Timetable".
- Tests Section:** Titled "Tests" with filters for "All", "Active", and "Completed". It features five test cards:
 - Mathematics:** Pure Mathematics • Paper 1. Status: "In progress" with a 75% progress bar.
 - Further Mathematics:** Core Pure • Paper 1. Status: "In progress" with a 0% progress bar.
 - Biology:** Specimen Paper 2026. Status: "Test completed 🌟" with a 100% progress bar and a green checkmark.
 - Chemistry:** Specimen Paper 2026. Status: "Test completed 🌟" with a 100% progress bar and a green checkmark.
 - Physics:** Mechanics • Paper 2. Status: "In progress" with a 0% progress bar.
- Timetable:** Shows the current date as Monday, 20 April, with a button indicating "No events for today".
- Reminders:** A reminder card for "Complete Edexcel Specimen for Further Mathematics" with a deadline of 22 April.
- Footer:** A "Log Out" button is located at the bottom left of the dashboard.

Platform Overview



Instant Automated Feedback

Cortex processes student work and delivers detailed marks and examiner-level comments within 10-30 minutes of submission.

Multi-Subject Support

All STEM subjects:

Mathematics, Further Mathematics, Physics, Chemistry, Biology, and more. Full A Level assessment objective alignment.

Cross-Platform Access

Access from any device: classroom PCs, laptops, mobile phones, and tablets. Students can practise anywhere, anytime.

Academic Integrity

Unique test generation for every sitting prevents plagiarism and ensures every student receives a fresh, fair assessment.






10-30 min processing

100% accessibility

Unlimited subject flexibility

Teacher Account

MANAGEMENT & ANALYTICS






-  **Test Creation**
Import from Edexcel, OCR or create unique variants from your own materials
-  **Publish Control**
Publish to specific students or classes with precise activation timing control
-  **Automated Marking**
Review and edit automatically marked student work with full override capability
-  **Class Analytics**
Visual data on class performance, common mistakes, and progress trends
-  **Report Export**
Platform, email, or PDF reports for printing and record-keeping



Sync

Student Account

EXAMS & FEEDBACK

-  **Any Device Access**
Desktop, laptop, or mobile phone - secure login from anywhere
-  **Flexible Submission**
Choose subjects and tasks with hybrid digital and handwritten answer modes
-  **OCR/HCR Photo Upload**
Photograph handwritten work for OCR/HCR analysis
-  **Instant Results**
Receive detailed automated feedback within 10-30 minutes of submission
-  **Profile Management**
Simple registration, personal data management, and class assignment

03

TEACHER ACCOUNT

From test creation to class analytics in one seamless flow

 Mocks Creation

 Automated Grading

 Analytics



Exam Automation Platform

Student Login

Teacher Login

Username **teacher**

Mary Johnson

.....

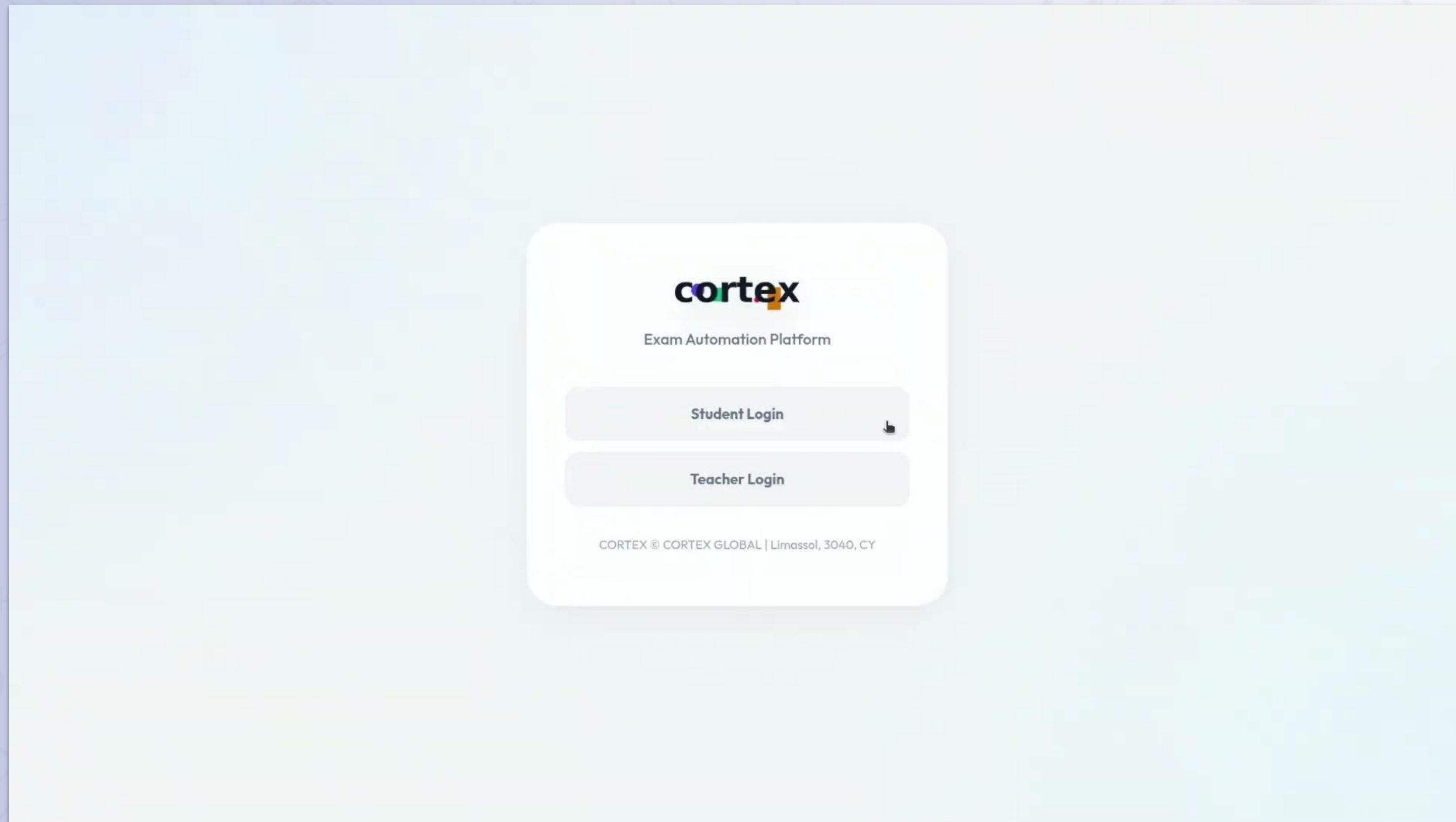
Log in as Teacher

CORTEX © CORTEX GLOBAL | Limassol, 3040, CY

Teacher Account Video



Click to see
the demo

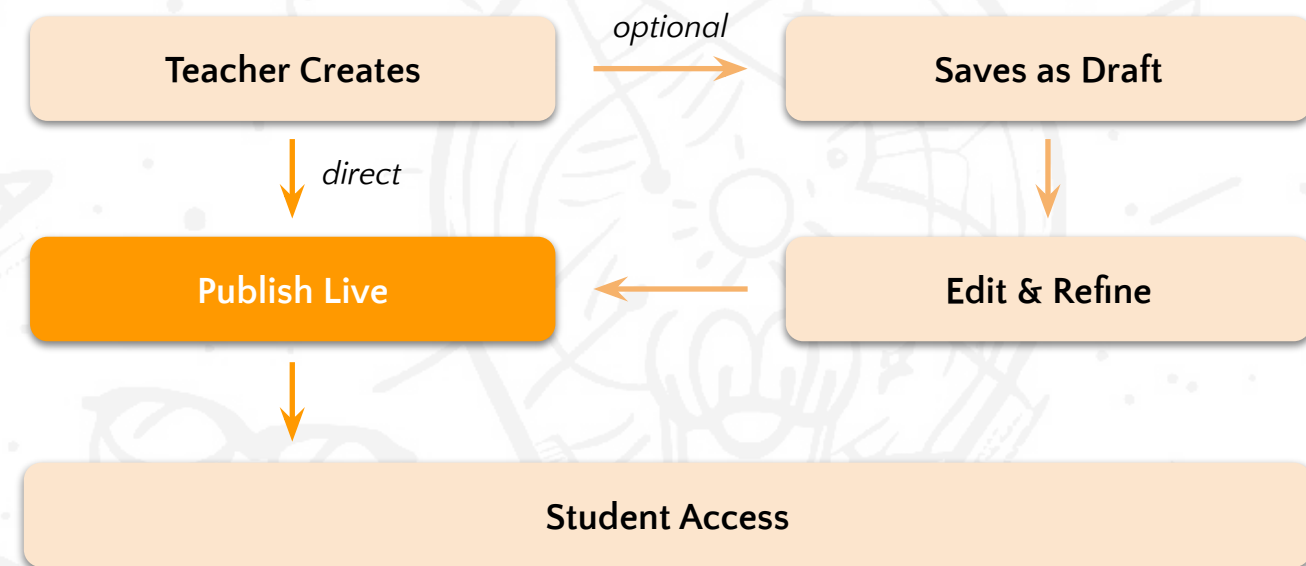


Teacher Flow - Test Creation & Management



- 1 Source Integration**
Import content from Edexcel, OCR and other textbooks to create mock assessments.
- 2 Create Unique Variants**
Develop bespoke exam papers not in public databases. Prevents plagiarism and ensures integrity.
- 3 Save as Draft**
Save tests during development. Edit and refine questions and mark schemes before publishing.
- 4 Publish Live**
Publish to specific students or classes with precise activation timing. Full control over access.
- 5 Students Access**
Test becomes available to students immediately. Real-time sync across all devices.

DRAFT-TO-LIVE WORKFLOW



Full control over when students can access each assessment.

Multi-subject support across all STEM question formats from short answer to complex equations.

Teacher Flow - Automated Marking & Analytics



Automated Assessment

Examiner-Level Grading

Criterion-based marks and feedback aligned with A Level assessment objectives. Detailed comments written for each criterion with marks awarded per component.

10-30

min processing

100%

automatic grading

STEM+

subjects

Teacher as final authority:

Full power to review, override, or adjust automatically generated marks and comments, ensuring 100% accuracy for every student.

Analytics & Insights

Data-Driven Insights

Class Overview

Visualise performance data for the entire class. Identify common knowledge gaps and trending errors across cohorts.

Individual Statistics

Detailed progress analysis per student with submission history, performance trends, and targeted recommendations.


Key Metrics

- Class average score
- Problem topic ID
- Improvement tracking
- Common mistakes
- Progress over time
- Class insights

04

STUDENT ACCOUNT

Seamless exam-taking with instant, actionable feedback

 Cross-Platform

 Handwritten Tasks Upload

 Instant Feedback



Exam Automation Platform

Student Login

Teacher Login

Username

John Smith

.....

Log in as Student

CORTEX © CORTEX GLOBAL | Limassol, 3040, CY

Student Account Video



Click to see
the demo



Student Flow - Cross-Platform Access & Submission



ANY DEVICE ACCESS



Desktop PC
Classroom / Lab



Laptop
Home / School



Smartphone
Anywhere



Tablet
Flexible Learning

FLEXIBLE SUBMISSION



Digital Input

Type answers directly on the platform for short-response questions and essays. Ideal for text-based tasks and structured responses.




OCR/HCR Photo Upload


Photograph handwritten work on your mobile and upload for automated analysis. Perfect for diagrams, equations, and sketches.


Student Flow - Instant Feedback & Reports



10-30
Minutes for results


Per-Question Analysis
with mistakes breakdown


Mark Justification
based on criteria


Multi-Access
Platform, email, PDF

REPORT STRUCTURE

1
Overall Grade

Summary score with class percentile and performance band placement.

2
Per-Question Breakdown

Detailed comments for each question with marks awarded and specific feedback.

3
Recommendations

Targeted advice on areas to focus on before the next assessment attempt.

4
Class Comparison

Anonymous benchmarking against peers for contextual performance insight.

Student Value: Instant feedback enables rapid identification of knowledge gaps and focused improvement

05

SUBJECTS & KEY BENEFITS

Real Examiner-Level Feedback - Subject Examples I



Built for major exam boards: Pearson | Cambridge - Expert grading across STEM

$Z = \frac{50.98 - \mu}{0.5}$
 $1.9600 = \frac{50.98 - \mu}{0.5}$
 $-50 = -\mu$

$P(-4 < Z < 3)$
 $= 0.9987$

$L \sim N(50, 0.5^2)$
 $P(49 < L < 50.75)$

$Z = \frac{49 - 50}{0.25}$ $Z = \frac{50.75 - 50}{0.25}$

MATHEMATICS

$= bk \cos kx - bk^2 x \sin kx - \dots - 2k^2 \sin kx - 4k^3 x \cos kx + k^4 x^2 \sin kx$
 $\frac{d^2 y}{dx^2} = \dots$
 $= -12k^2 \sin kx - 6k^4 x \cos kx + 6k^4 x \sin kx + k^5 x^2 \cos kx - bk^3 \cos kx$
 $= \sin kx (-12k^2 + 6k^4 x) + \cos kx (k^5 x^2 - 6k^3 - bk)$

FURTHER MATHEMATICS

PHYSICS

Use variable resistor to obtain series of readings for V and I

The conclusion is not fully supported by these results. It is supported by the results shown by the slow twitch fibres. The activity of ATPase greatly reduces after a peak at the **BIOLOGY** months, falling from 1.04 au to 0.82 au in a space of 18 months. In contrast to this the amount of ATPase activity in fast twitch fibres drops 0.04 au from a peak at 10 months.

Ratio of $\text{Na}_2\text{O} : \text{CO}_2$
 $4 : 2 : 1$
 $\text{Mr of Na}_2\text{O} = 23 + 16 \times 2 = 55$
 $\therefore n = \frac{880}{55} = 16 \text{ mol}$ $\therefore n \text{ of CO}_2 = 8 \text{ mol}$

CHEMISTRY

$\therefore \text{excess CO}_2 = 24 - 8 = 16 \text{ mol}$
 Ratio of $\text{Na}_2\text{O} : \text{CO}_2$
 $1 : 1$
 $\therefore n \text{ of Na}_2\text{O} = 16 \text{ mol}$

$\text{Mr of Na}_2\text{O} = 23 \times 2 + 16 = 62$
 $\therefore \text{mass} = 62 \times 16 = 992 \text{ g}$

+
 more subjects

Real Examiner-Level Feedback - Subject Examples II



MATHEMATICS

(a) Systematic sampling

(b) Some values are recorded as N/A because the data is missing

(c)
$$s = \sqrt{7600 - \left(\frac{374}{20}\right)^2} = \sqrt{7250.31}$$

$$= 85.14$$

Examiner comments

- Part (a) is correct. Spelling is not penalised because the sampling method is clear.
- Part (b) is correct: you identified that the values are recorded as N/A because data is missing.
- Part (c) uses an incorrect standard deviation formula, so no accuracy marks are awarded for this part.
- Revise the standard deviation formula using summary statistics, especially the difference between dividing by n and using the mean term correctly. Then practise three similar calculator-based questions.

Use this feedback to plan the next revision task, practise the exact weak skill, and then attempt a similar exam-board question under timed conditions.

BIOLOGY

Explain how the formation of mRNA, shown in the diagram, might account for this. (5)

As you can have alternative splicing in which some of the gene are missed out in transcription, this leads to a larger no. number of gene sequences. As shown above the same gene can code for more than one strand of mRNA which have a different sequence which will lead to the translation of a different protein depending on which genes are expressed. So a gene can produce depending on size and order more than 1 mRNA, leading to more proteins than genes.

Examiner comments

- Credit is awarded for recognising that alternative splicing can form different mRNA transcripts.
- The response is too unclear to receive the other marking points. The explanation of gene expression is confused and does not clearly link exon selection to protein structure.
- Revise mRNA processing: introns are removed, exons are joined, and different exon combinations can produce different amino acid sequences.
- Practise writing short, step-by-step biology explanations using the terms exon, intron, mRNA, translation, amino acid sequence, and protein.

Use this feedback to plan the next revision task, practise the exact weak skill, and then attempt a similar exam-board question under timed conditions.

FURTHER MATHEMATICS

a. Then needs to be brackets around "x-24"
 $(x-24)(x+11) - (x-24) > 0$
 OK write "x+24" instead
 $(x-24)(x+11) - (x+24) > 0$

b. $x(x-24)(x+11) > (x+11)(x-24)^2$
 $x(x-24)(x+11) - (x+11)(x-24)^2 > 0$
 $(x-24)(x+11)[x(x+11) - (x-24)^2] > 0$
 $(x-24)(x+11)[x^2+11x - (x^2-48x+576)] > 0$
 $(x-24)(x+11)[x^2+59x-576] > 0$
 $(x^2+10x+24)$ has no real roots
 \therefore roots are $x=24, x=-11$

$\{x \in \mathbb{R} : x < -11\} \cup \{x \in \mathbb{R} : x > 24\}$

Examiner comments

- Parts (a)(i) and (a)(ii) receive credit for acceptable explanations.
- In part (b), an algebraic error early in the working leads to an incorrect quadratic and prevents the correct inequality solution.
- The final answer does not correctly identify the required interval structure for the inequality.
- Revise quadratic inequalities by first finding the roots accurately, then sketching the sign pattern to decide whether the answer is the middle interval or the two outside intervals.

Use this feedback to plan the next revision task, practise the exact weak skill, and then attempt a similar exam-board question under timed conditions.

CHEMISTRY

(c) A 0.161 g sample of sodium peroxide was reacted with water.

$$\text{Na}_2\text{O}_2 + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2\text{O}_2$$

$\therefore n(\text{H}_2\text{O}_2) = 0.00206 \text{ mol}$

The hydrogen peroxide produced was determined by titration with a solution containing cerium(IV) ions. In this reaction the hydrogen peroxide is converted into oxygen

$$\text{H}_2\text{O}_2 \rightarrow 2\text{H}^+ + \text{O}_2 + 2\text{e}^-$$

The solution reacted with exactly 19.85 cm³ of a 0.208 mol dm⁻³ solution of cerium(IV) ions, Ce⁴⁺.

Deduce the formula of the cerium ion present in the final solution.

$$19.85 \times 10^{-3} \text{ dm}^3 \times 0.208 \text{ mol dm}^{-3} \text{ Ce}^{4+} = 4.1288 \times 10^{-3} \text{ mol Ce}^{4+}$$

$$\text{H}_2\text{O}_2 \rightarrow 2\text{H}^+ + \text{O}_2 + 2\text{e}^-$$

$$\text{Ce}^{4+} \rightarrow \text{Ce}^{3+} + \text{e}^-$$

$$4.1288 \times 10^{-3} \text{ mol Ce}^{4+} \rightarrow 4.1288 \times 10^{-3} \text{ mol Ce}^{3+}$$

$\text{H}_2\text{O}_2 : \text{Ce}^{4+}$
 $0.00206 : 4.1288 \times 10^{-3}$
 $0.5 \text{ mol} : 1 \text{ mol}$
 $1 : 2 \text{ mol}$

Formula of cerium ion = Ce^{3+}

Examiner comments

- You correctly calculated the moles of Ce⁴⁺ and the moles of H₂O₂.
- You used the mole ratio Ce⁴⁺:H₂O₂ correctly, so the first three marking points are achieved.
- The final ion should be Ce³⁺, not Ce⁵⁺. The cerium ion is reduced when it gains an electron.
- Revise redox half-equations and oxidation-state changes. Pay particular attention to whether electrons appear on the left or right of the half-equation.

Use this feedback to plan the next revision task, practise the exact weak skill, and then attempt a similar exam-board question under timed conditions.

PHYSICS

(a) The ball is in contact with the racket for 0.04 s.
 Calculate the average force on the ball. (3)

$$2.5 \times 0.06 = 1.5 \text{ kg ms}^{-1}$$

$$1.5 \div 0.04 = 37.5 \text{ N}$$

(b) The ball must land within 6.1 m of the other side of the net.
 Determine whether the ball hits the ground within this distance. Support your answer with a calculation. Ignore the height of the net. (6)

2.5 m above ground $s = ut + \frac{1}{2}at^2$
 $2.5 = \frac{1}{2}(9.81)(t^2)$
 $t = \sqrt{\frac{2 \times 2.5}{9.81}} = 0.714 \text{ s}$
 $2.5 \times 0.714 = 1.78 \text{ m}$
 $17.8 - 12 = 5.8 \text{ m}$ on the other side of the net. So the ball does indeed hit the ground within this distance.

Examiner comments

- Part (a) is fully correct. You calculated impulse correctly, divided by time correctly, and gave the answer with the correct unit.
- Part (b) is also correct. Your SUVAT working is valid and the horizontal distance calculation supports the conclusion.
- For an even stronger exam response, make the final comparison explicit: because 5.8 m is less than 6.1 m, the ball lands within the required distance.
- Practise more connected mechanics questions where vertical motion is used to find time and horizontal motion is then used to find distance.

Use this feedback to plan the next revision task, practise the exact weak skill, and then attempt a similar exam-board question under timed conditions.

Key Benefits - Tangible Outcomes for Schools



Time Savings

Automated marking frees teachers from hours of routine paper checking for teaching and support.



Instant Feedback

Detailed results within 10-30 minutes with per-question error analysis and actionable recommendations.



Objective Assessment

Consistent marking criteria for all students with full teacher oversight.



Format Flexibility

Cross-platform access and hybrid submission - digital input plus OCR photo recognition.



Data Insights

Class performance analytics and individual progress tracking to identify gaps and measure improvement.



Scalability

Unlimited subjects, tests, and students - from a single class to an entire school or multi-academy trust.

£0.10-£0.30 per practice exercise

Hours instead of weeks · More mock exams · Every student receives instant feedback

READY TO TRANSFORM YOUR ASSESSMENT PROCESS?

Cortex assessment platform is now available for your school or college. Organise a free pilot and see how Cortex can help.

contact@cortex-global.com

cortex-global.com

LIVE GRADING

- Item 01: Correct** +1.0 pts
The ball is in contact with the racket for 0.04 s.
- Item 02: Partial Credit** +0.5 pts
Good start! Check your formula and units.
- Item 03: Incorrect** 0.0 pts
Review the standard deviation formula.

Total Score 8.5 / 10

Answers to parts a) and b)

Student answer A

(a) The ball is in contact with the racket for 0.04 s. Calculate the average force on the ball.

$$2.5 \times 0.06 = 1.5 \text{ kg ms}^{-1} \quad (3)$$

$$1.5 \div 0.04 = \underline{37.5 \text{ N}}$$

(b) The ball must land within 6.1 m of the other side of the net. Determine whether the ball hits the ground within this distance with a calculation. [with a calculation. Ignore the height of the net.]

2.5 m above ground $s = ut + \frac{1}{2} at^2$

$$2.5 = \frac{1}{2} (9.81) (t^2)$$

$$t = \sqrt{\frac{2.5}{4.905}} = 0.714 \text{ seconds} \quad t \text{ reach ground}$$

$$2.5 \times 0.714 = 17.8 \text{ m}$$

$$17.8 - 12 = 5.8 \text{ m on the other side of the net. So the ball does indeed hit the ground within this distance.}$$

Examiner comments

- Correct calculation of average force
- Units and final answer are correct.
- Correct use of SUVAT equation.
- Clear working and conclusion supported by calculation.

Student Response B

(a) Systematic sampling

(b) Some values are recorded as N/A because the data is missing

(c) $\sigma = \sqrt{7600 - \left(\frac{374}{20}\right)^2} = \sqrt{7250.31} = \underline{85.14}$

Examiner comments

- (a) Correct.
- (b) Correct explanation.
- (c) Incorrect formula used. The correct formula for standard deviation is required.