IQM4003

LEVEL 4 · CONTROLLED ASSESSMENT

INTO QUALIFICATIONS

Mathematics and Statistics for Business

Final Examination

Candidate question paper

Duration
2 hours

Total marks
60

Assessment window
Sample assessment

Assessment set
Set S of 2026

Response instruction
Follow the response instructions shown for each section.

Release timing
exam release

Paper
IQM4003 A2

Assessment set ID
2026-S

INTO QUALIFICATIONS LEARNER ID

DELIVERY CENTRE ID (OPTIONAL)

EXAM DATE
_____

ASSESSMENT SET
Set S of 2026

Do not open this paper until instructed. Follow the response instructions in this paper.

FOR MARKER USE ONLY

Marker initials	**Mark / 60**

About this sample assessment

Weighting: 60% of module

AI condition: Level 1 – Controlled Assessment: no AI permitted at any stage.

SAMPLE ASSESSMENT / 2026-S — Assess core quantitative techniques, interpretation of data and justified decision-making in business and finance contexts. This paper assesses LO1, LO3 and LO4.

Instructions for candidates

This is a secure, invigilated, closed-book examination. Answer every question. The paper contains multiple-choice, short-answer and extended-response questions, and all questions are compulsory. Show sufficient working for calculation marks and communicate conclusions clearly. Round money to two decimal places and percentages to one decimal place unless stated.

No additional materials are permitted. A non-programmable, non-graphing scientific calculator is required. Calculators with CAS, text, image, document storage or internet capability, and phones, tablets and smart watches, are not permitted.

Section A — Multiple-choice questions — 6 marks

Choose one answer for each question. Each question is worth 2 marks.

Q1 [2 marks]

A retailer’s weekly revenue is £20,000. Revenue rises by 10%. What is the new revenue?

A. £20,100 B. £21,000 C. £22,000 D. £30,000

Q2 [2 marks]

Which measure of central tendency is generally least affected by one unusually high observation in a numerical dataset?

A. Mean B. Median C. Mid-range D. Total

Q3 [2 marks]

A correlation coefficient of r = −0.82 indicates:

A. a strong positive linear association B. a weak positive linear association C. a strong negative linear association D. proof that one variable causes the other

Section B — Short-answer questions — 24 marks

Answer every question. Show your working and interpret numerical answers in context. Each question is worth 6 marks.

Q4 [6 marks]

A retailer’s weekly gross revenue is £48,000. Revenue rises by 7.5%, then the new amount is discounted by 4% for a promotion. Calculate revenue after both changes and the net percentage change from the original. Explain why the two percentages cannot simply be added.

Q5 [6 marks]

Monthly demand (units) is 18, 20, 17, 25, 30. Calculate the mean, median and range. Identify the most suitable statistic if one unusually high month is added and explain why.

Q6 [6 marks]

A finance manager invests £12,000 at 5% compound interest annually for 3 years. Calculate the final amount and interest earned. Show the formula.

Q7 [6 marks]

A forecast model predicts 1,250 orders for next month; actual orders are 1,100. Calculate the absolute error and absolute percentage error using actual orders as denominator. Briefly explain two checks before managers rely on this forecast.

Section C — Extended-response questions — 30 marks

Answer both questions. Use a structured response with calculations, explanation, interpretation and a justified conclusion. Each question is worth 15 marks.

Q8 [15 marks]

A shop records advertising spend x (£000) and weekly sales y (£000). A fitted model is $\hat{y} = 24 + 2.8x$; $r = 0.76$. Predict sales for $x = 5$. Explain the slope and correlation in context, evaluate one reason why this relationship is not proof of causation, and recommend one further check before increasing the advertising budget.

Q9 [15 marks]

Quarterly sales index values are Q1 92, Q2 98, Q3 104 and Q4 106, with an annual average index of 100. Explain what the Q1 index means and calculate the Q4 sales value if average quarterly sales are £250,000, assuming the index is relative to that average. Use the evidence to advise whether a business should plan staffing evenly across the year or allow for seasonal variation, and state one limitation of this decision.

Prepare and submit your work

- All numerical evidence is included in the questions. No external source or formula booklet is specified for this closed-book examination. Submit the completed answer booklet according to centre instructions.