

A-level **MATHEMATICS**

Unit Pure Core 3
Report on the Examination

6360
June 18

Version: 1.0

Further copies of this Report are available from aqa.org.uk

Copyright © 2018 AQA and its licensors. All rights reserved.

AQA retains the copyright on all its publications. However, registered schools/colleges for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

General

The vast majority of students appeared to have been well prepared for the demands of the paper and had the time to tackle all of the questions.

Many students failed to include brackets in some of their expressions.

Students need to realise that when they are asked to show a given result, they must show sufficient details in the solution to justify the result. Also, if they are asked to use a specific method to find a solution then the use of alternative methods will be heavily penalised.

Question 1

Part (a) was generally answered correctly. The main error was the omission of an 'x' term outside the bracket.

Part (b) was also generally well answered with most students scoring full marks. The major error was the omission of a constant.

Question 2

Part (a) was very well answered, with the majority of students earning full marks.

Part (b) was a good discriminator. In part (b)(i), less able students often could not differentiate the function, with $-1 - 3\operatorname{cosec}^2 y$ being a very common result. In part (b)(ii), most students earned a method mark for inverting their answer to part (i). The more able students were then able to correctly substitute the given value into their expression and proceed to a correct answer.

Question 3

Part (a)(i) was very well answered by many students. Some students gave their point of intersection as (1, 0). Part (a)(ii) was also well answered, with most students gaining all 3 marks. Some students gave an incorrect translation following a correct stretch.

Part (b)(i) was well answered by nearly all students. In part (ii), students struggled to understand the implications of the question and merely tried Simpson's rule again.

Question 4

This question was very well answered by the majority of students.

Weaker students struggled with part (a)(iii) as they failed to realise that their straight line would intersect the curve above the upper asymptote. Part (b) was well answered although a number of students used degrees rather than radians. Part (c) was also well answered.

Question 5

In part (a)(i), virtually all students scored full marks. In part (ii), although students realised that '1' was the key number, many failed to use the correct notation.

In part (b), again many students found the key value, this time -4 , but fully correct answers were rarely seen.

Part (c)(i) was well answered, but part (c)(ii) proved to be a challenge for all but the best students, with many showing a lack of understanding of algebraic techniques. Many students failed to isolate the square root term and those that did were unable to square the right hand side correctly. Of the students who did score the first 4 marks, many failed to discard the extra answer of 23.

Question 6

This question was very well answered by the more able student with many fully correct responses seen, but weaker students often failed to score anything after the first B1 mark. There were errors in handling the signs following the integration.

Question 7

The majority of students scored the first 2 marks. Some students made somewhat fudged attempts to obtain the given answer.

In part (b), some students set the problem up with $u = e^{-6x}$ and $\frac{dy}{dx} = (x-1)^2$. The majority of students were able to make a good attempt at the question but there were many mistakes handling the repeated negatives. A handful of students integrated the function once, stopped, then repeated what they had just done and again stopped, presumably thinking this was what was meant by 'using integration by parts twice'.

In part (c), many students lost a mark by not writing down fully the integral required. Many students were able to score the method mark but fully correct answers were scarce.

Question 8

Part (a) was well answered by many of the students with full marks often awarded. For students who failed to score full marks, the main problem was using the correct trig identity to simplify the denominator.

In part (b), there were many excellent solutions. Often students who failed to correctly answer part (a) were able to use the given result and score the majority of marks in this part. The common source of errors was in writing their answers to three significant figures.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.

Converting Marks into UMS marks

Convert raw marks into Uniform Mark Scale (UMS) marks by using the link below.

UMS conversion calculator www.aqa.org.uk/umsconversion