

Clarification of the content guidance for Advanced GCE in Mathematics (9MA0)

We have made amendments to the content guidance for the A level Mathematics specification in two places.

The clarification will affect:

1. Specification topic 7– Differentiation, in particular specification content 7.4

Differentiate using the product rule, the quotient rule and the chain rule, including problems involving connected rates of change and inverse functions.

The existing content guidance:

Differentiation of cosec x , cot x and sec x and differentiation of arcsin x , arcos x , and arctan x are required. Skill will be expected in the differentiation of functions generated from standard forms using products, quotients and composition, such as $2x^4 \sin x$, $\frac{e^{3x}}{x}$, $\cos^2 x$ and $\tan^2 2x$.

is being **amended** to say:

Differentiation of cosec x , cot x and sec x .

Differentiation of functions of the form $x = \sin y$, $x = 3 \tan 2y$ and the use of $\frac{dy}{dx} = \frac{1}{\frac{dx}{dy}}$

Use of connected rates of change in models, e.g. $\frac{dV}{dt} = \frac{dV}{dr} \times \frac{dr}{dt}$

Skill will be expected in the differentiation of functions generated from standard forms using products, quotients and composition, such as $2x^4 \sin x$, $\frac{e^{3x}}{x}$, $\cos^2 x$ and $\tan^2 2x$.

2. Specification topic 8 – Integration, in particular specification content 8.3

Evaluate definite integrals; use a definite integral to find the area under a curve and the area between two curves.

The existing content guidance:

Students will be expected to be able to evaluate the area of a region bounded by a curve and given straight lines, or between two curves.

is being **extended** to add:

This includes curves defined parametrically.

Both amendments will be reflected in the free resources: A level Mathematics Scheme of Work, mapping documents and A level Mathematics Interactive Scheme of Work, where you can find further guidance for teaching.

We have also created [two new textbook pages](#) to accompany the existing *Edexcel A level Mathematics Pure Mathematics Year 2 Textbook*, covering the second amendment to the content guidance.

No new textbook content is required for the amendment to topic 7. However, the derivatives of $\arcsin x$, $\arccos x$ and $\arctan x$ given on page 248 and any related examples and questions are no longer required.

Corrections to errors in AS and A level Further Mathematics specifications

There have also recently been some corrections made to errors found in our Further Maths specifications. See a summary of the changes in our [updated specifications](#).

If you have any questions please contact our Subject advisor Graham Cumming:

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