

MAT 1998 Relevance Checker

- **Red:** Question not relevant for current syllabus.
- **Orange:** Question not entirely relevant for current syllabus but worth attempting. See comments.
- **Black:** Question relevant for current syllabus.

1. Multiple Choice

(a). Dividing a Line

This question is relevant for the current syllabus.

(b). Polynomial Divisibility

This question is relevant for the current syllabus.

(c). Large n Limit

This question is relevant for the current syllabus.

(d). Simultaneous Equations

This question is relevant for the current syllabus.

(e). Area Bounded Between Curves

This part of the question uses trigonometric integration, which is not relevant for the current syllabus.

(f). Exponential Function

This question requires the product rule and other advanced differentiation results, and is not relevant for the modern syllabus.

(g). Trigonometric Equation

This question requires the use of the double angle formula to deduce that $\cos(x) = \cos^2\left(\frac{x}{2}\right) - \sin^2\left(\frac{x}{2}\right)$, and this result is not on the current syllabus. However, the question is good practice if you assume this result and carry on from there. Note that, on a modern paper, it would also be set in degrees rather than radians.

(h). Graph Transformations

This question is relevant for the current syllabus.

(k). Modulus

This question is relevant for the current syllabus, although they would probably give you the definition of the modulus function: $|x| = x$ if $x > 0$ and $-x$ otherwise.

2. Partial Fractions and Summation

The entirety of this question is relevant for the current syllabus.

3. Mirror Images

The entirety of this question is relevant for the current syllabus.

4. Calculus Stress Test

This question entirely consists of advanced integration and differentiation, all of which lies beyond the MAT syllabus. It's therefore not relevant for the current syllabus.

5. Ordering Pebbles

The entirety of this question is relevant for the current syllabus.