SYLLABUS · CORE · WASSCE 2026

Mathematics syllabus

Every examinable topic area in WAEC Mathematics, in one place — with how the papers are structured and answers to common questions. Compiled by waeccbt.com; not an official WAEC document.

How the papers work: Paper 1 — 50 multiple-choice objective questions · 1 hour 30 minutes · 50 marks. Drawn from the common areas of the syllabus. Paper 2 — 13 essay questions in two sections · 2 hours 30 minutes · 100 marks. Answer 10 questions in all. Section A: 5 compulsory elementary questions for 40 marks. Section B: answer 5 of 8 longer, harder questions for 60 marks; up to two Section B questions may come from parts of the syllabus outside your home country's curriculum. Non-programmable, silent, cordless calculators are allowed — phones are banned even if they have calculators, and some questions may prohibit calculators or tables outright.

1. Number and numeration

- Number bases (conversion, addition, subtraction, multiplication)
- Modular arithmetic and everyday applications (market days, clock, shifts)
- Fractions, decimals, approximations and significant figures
- Indices and standard form (scientific notation)
- Logarithms: rules, tables and antilogarithms
- Sequences and series — AP (with sum) and GP (nth term only, no sum)
- Sets: union, intersection, complement, Venn diagrams up to 3 sets
- Logical reasoning: statements, negation, implication
- Positive and negative integers, rational numbers
- Surds: simplification and rationalisation
- Matrices and determinants (up to 3×3 identification; determinants and simultaneous equations restricted to 2×2)
- Ratio, proportion and rates (taxes, VAT, exchange, speed, density)
- Percentages: simple and compound interest (max 3 years), profit and loss, depreciation, hire purchase, percentage error
- Financial arithmetic: depreciation/amortisation, annuities, shares, bonds and debentures
- Variation: direct, inverse, partial and joint

2. Algebraic processes

- Forming and evaluating algebraic expressions
- Expansion and factorisation; difference of two squares
- Binary operations on real numbers
- Linear equations in one variable; simultaneous equations in two variables (elimination, substitution, graphical)
- Change of subject of a formula and substitution
- Quadratic equations: factorisation, completing the square, formula; forming equations from given roots
- Graphs of linear and quadratic functions; roots, maximum and minimum points, axis of symmetry; tangents to determine gradient

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- Linear inequalities in one and two variables; linear programming applications (maximum profit, minimum cost)
- Algebraic fractions with monomial and binomial denominators; values for which a fraction is undefined
- Functions and relations: one-to-one, one-to-many, mapping and rules

3. Mensuration

- Lengths and perimeters; Pythagoras' theorem; sine and cosine rules for distances
- Arcs of circles, perimeters of sectors and segments
- Longitudes and latitudes: distances along parallels and meridians
- Areas of triangles (½bh and ½ab sinC), quadrilaterals, circles, sectors, segments and compound shapes; areas of similar figures
- Surface areas of cubes, cuboids, cylinders, cones, pyramids, prisms and spheres
- Volumes of solids and compound solids; volumes of similar solids

4. Plane geometry

- Angles at a point, on a straight line, vertically opposite angles
- Angles on parallel lines: alternate, corresponding, interior opposite; intercept theorem
- Triangles and polygons: angle sums, exterior angles, congruency, similarity; interior angle sum $(n-2)180°$
- Circle theorems: angle at centre, angle in semicircle, same segment, cyclic quadrilaterals, tangent–radius, alternate segment
- Construction: bisectors, perpendiculars, standard angles (90°, 60°, 45°, 30° and combinations), triangles and quadrilaterals
- Loci: distances from points and lines, equidistance, and their intersections

5. Coordinate geometry of straight lines

- Midpoint and distance between two points
- Gradient of a line; equations $y = mx + c$ and $y - y_1 = m(x - x_1)$

6. Trigonometry

- Sine, cosine, tangent of acute angles; special angles 30°, 45°, 60° without tables
- Ratios of angles from 0° to 360°; graphs of sine and cosine
- Angles of elevation and depression; heights and distances
- Bearings: three-figure notation, distances and angles

7. Introductory calculus

- Differentiation of algebraic functions; gradient of a curve; maxima, minima and rates of change
- Integration of simple algebraic functions; simple definite integrals

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8. Statistics and probability

- Frequency distributions; class intervals, marks and boundaries
- Pie charts, bar charts, histograms and frequency polygons
- Mean, median and mode for discrete and grouped data
- Cumulative frequency curves (ogive); quartiles and percentiles
- Measures of dispersion: range, inter-quartile range, mean deviation, variance, standard deviation
- Experimental and theoretical probability; addition rule for mutually exclusive events; multiplication rule for independent events

9. Vectors and transformations

- Vectors as directed line segments; components, magnitude, addition, scalar multiplication, parallel and equal vectors
- Reflection, rotation, translation and enlargement in the Cartesian plane; mirror lines, angle of rotation, scale factors

Frequently asked questions

How many questions are in WAEC Mathematics Paper 1?

Paper 1 has 50 multiple-choice questions to be answered in 1 hour 30 minutes for 50 marks. That is under two minutes per question, so timed practice matters as much as knowing the topics.

How many questions do I answer in Mathematics Paper 2?

Ten out of thirteen. All five short compulsory questions in Section A (40 marks), then any five of the eight longer questions in Section B (60 marks). The paper lasts 2 hours 30 minutes.

Is a calculator allowed in WAEC Mathematics?

Yes — a non-programmable, silent, cordless calculator. Phones are banned completely, and a few questions may say tables or calculators must not be used, so practise both ways.

What topics come up most in WAEC Mathematics?

Algebra, mensuration, plane geometry, trigonometry and statistics/probability appear every single year, and Paper 1 spreads across the whole syllabus. Nothing on the syllabus is safe to skip entirely.

Is Mathematics compulsory in WASSCE?

Yes. It is a core subject for every candidate, and a credit (C6 or better) is required for admission into almost every tertiary course in Nigeria.

Does WAEC Mathematics include calculus?

Yes — introductory calculus is on the syllabus: differentiation of algebraic functions, simple integration, and applications like maximum, minimum and rates of change.

What instruments should I bring to the Mathematics exam?

A ruler, a pair of compasses, a protractor and set squares, plus your calculator. You will not be allowed to borrow from other candidates in the hall.

Practise this syllabus free — timed CBT papers with instant marking: waeccbt.com/practice.html?subject=mathematics

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