WACE Mathematics Specialist Formula Sheet

Original worked revision examples with notes on units and assumptions.

Use the board PDF below for the official sheet. Coverage of examples varies by subject.

Official reference material

SCSA Mathematics Specialist 2026 formula sheet

What to work out beyond the sheet

Distinguish speed, the length of a velocity vector, from the velocity vector itself.

Formulas and worked examples

Vectors · angle from a dot product

Formula or reference: $\cos\theta = (u \cdot v)/(|u||v|)$.

Units and conditions: Both vectors must be nonzero. θ is the angle between them.

Worked example: For $u = (1,0,1)$ and $v = (0,1,1)$, $\cos\theta = 1/2$ and $\theta = 60°$.

Motion · velocity and acceleration

Formula or reference: Differentiate position to get velocity and differentiate velocity to get acceleration.

Units and conditions: If position is in m and time in s, velocity is in m/s and acceleration in m/s².

Worked example: For $r(t) = (3t, t^2, 0)$, $v(2) = (3,4,0)$ m/s and $a(2) = (0,2,0)$ m/s².